A STUDY TO EVALUATE THE EFFECTIVENESS OF PROGRESSIVE MUSCLE RELAXATION THERAPY ON STRESS AMONG PATIENTS WITH CORONARY ARTERY DISEASE IN RAGHAV HOSPITAL, APPAKUDAL, ERODE DISTRICT

By

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Dharmarathnakara Dr.Mahalingam Institute of Paramedical Sciences & Research,

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1. INTERNAL EXAMINER: ----------

2. EXTERNAL EXAMINER: ----------

OCTOBER - 2018

ENDORSEMENT BY THE PRINCIPAL/HEAD OF THE INSTITUTION

This is to certify that the dissertation entitled "**A study to evaluate the effectiveness of progressive muscle relaxation therapy on stress among patients with coronary artery disease in selected hospitals at erode district**" is a bonafide research work done by **Mr.Jijo Varghese** under the guidance of **Asso.Prof. Mrs.Juliet Nirmala Mary, M.Sc., (Nursing), Head of the Department, Medical Surgical Nursing.** .

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LIST OF ABBREVIATION USED

Et.al	And Other
χ^2	Chi-Square Test
CAD	Coronary Artery Disease
CHD	Coronary Heart Disease
DMIPSR	Dharmarathnakara Dr. Mahalingam Institute Of Paramedical Sciences & Research
Fig	Figure
HOD	Head Of The Department
M.Sc (N)	Master Of Science (Nursing)
MI	Myocardial Infarction
NO	Number
%	Percentage
P	Probability
Prof	Professor
PMRT	Progressive Muscle Relaxation Therapy
H_1	Research Hypothesis 1
H_2	Research Hypothesis 2
H_3	Research Hypothesis 3
SL	Serial
S.D	Standard Deviation
S	Significant
N	Total Number Of Samples

ABTRACT

STATEMENT OF THE PROBLEM

A study to evaluate the effectiveness of progressive muscle relaxation therapy on stress among patient with coronary artery disease in Raghav hospital, Appakudal, erode district.

OBJECTIVES

- To assess the level of stress among patients with coronary artery disease of experimental and control group in Raghav hospital, Appakudal, erode district.
- To evaluate the effectiveness of progressive muscle relaxation therapy on stress among patients with coronary artery disease in experimental group.
- To compare the posttest level of stress among patients with coronary artery disease of experimental and control group.
- To find out the association between pretest level of stress among patients with coronary artery disease with their selected demographic variables and clinical variables.

METHODS

The research approach used for this study was evaluative approach and the research design was quasi experimental design, 60 patients with coronary artery disease, among that 30 in experimental group 30 in control group were selected for this study by using convenient sampling technique. Descriptive statistics (frequency, percentage, mean and standard deviation) and inferential statistics

(chi-square, paired‘t’ test & unpaired‘t’ test) were used to analyze the data and to test hypothesis.

Major Findings

The result of the study showed that the pretest level of stress. The mean score in experimental group is Mild 2(7%), Moderate 6(20%) and Severe 22 (73%) whereas , it was reduced in the post test with means score mild 18(60%), moderate 10(33.3%) and severe 2 (6.6%)). It states that Progressive muscle relaxation therapy has an impact on stress among CAD patients in experimental group.

The computed‘t’ value 11.353 was higher than the calculated value at 0.05 level of significance. Hence, H_1 (there is significant difference between pre test and post test level of stress among CAD patients in experimental group) was accepted.

The post test overall stress score in experimental group. The mild 18(60%), moderate 10(33.3%) and severe 2 (6.6%) and where as in control group mild 2 (6.6%), moderate 9 (20%) and severe 22 (73.3. %).

The comparison between post test level of stress score in experimental group and control group. showing the value are significant which was observed from unpaired‘t’ test value of 9.833 at 0.05 level of significance, which is evident for the effect of Progressive muscle relaxation therapy in reducing stress level among CAD patients . Hence, H_2 (There is significant difference in post test level of stress among CAD patients in experimental group and control group) was accepted.

- The findings of the study showed that there is significant association between pretest level of stress and demographic variables such as living

area and clinical variables such as pulse rate, blood pressure in experimental group and control group.

CONCLUSION

The study assessed the level of stress among patients with coronary artery disease and found that after progressive muscle relaxation therapy and their level of stress was significantly reduced in experimental group. The study concluded that the progressive muscle relaxation therapy is effective in reducing the level of stress among patient with coronary artery disease.

KEY WORDS

Effectiveness, progressive muscle relaxation therapy, stress.

CHAPTER – I

INTRODUCTION

"A QUIET MIND CURETH ALL"

There is increasing recognition in the medical and scientific communities of the importance of behavioral and psychosocial factors in the prevention, development and treatment of cardio – vascular disorders. Cardiovascular disease is responsible for 10% of disability adjusted life years lost in low and middle income countries and 18% in high income countries.

Coronary heart disease is increasing in developing and transitional countries, partly as a result of increasing longevity, urbanization, stress and life style changes. Coronary heart disease burden is projected to rise from around 47 million disability – adjusted life years globally in 1990 to 82 million in 2020.

Coronary heart disease is the most common type of heart disease, killing more than 3, 85,000 people annually. More than half of the deaths due to heart disease in 2010 were in men. Each year about 9,35,000 Americans have a heart attack of these 6,10,000 are a first attack, 3,25,000 happen in people who have already had a heart attack. About 6, 00,000 people die of heart disease in the United States every year – that's 1 in every 4 deaths. **– Americans academy of family physicians (2017)**

BURDEN OF CORONARY ARTERY DISEASE

GLOBAL	YEAR	MEN	WOMEN
	2010	6.8%	5.3%
	2011	7.2%	6.1%
	2012	7.5%	6.5%
NATIONAL			
	2010	6.1%	4.9%
	2011	6.7%	5.8%
	2012	7.0%	6.8%
TAMILNADU			
	2010	5.8%	5.3%
	2011	6.2%	5.7%
	2012	6.6%	6.0%

In Erode District, prevalence of coronary artery disease in adults was 18.5% among that 40.5% were hypertensive and 59.5% were normotensive clients.

Kasturba medical college mangalore.

The coronary artery disease also known as coronary atherosclerosis, involves the progressive narrowing of the arteries that nourish the heart muscle. Often there are no symptoms, but if one or more of these arteries become severely narrowed, angina, may develop during stress or other times when the heart muscle is not getting actual enough blood. Stressful tasks can cause an actual decrease in blood flow to the heart, mimicking what happens during a heart attack, though to a lesser extent. The decrease in coronary blood flow that occurs with mental stress can be as great as with physical exertion.

Peter A. Shapiro (2015)

The stress is your body's way of responding to any kind of demand. It can be caused by both good and bad experiences. When people feel stressed by something going on around them, their bodies react by releasing chemicals can affect both your body and mind. People under large amounts of stress can become tired, sick and unable to concentrate. **– Kool hass, J,et.al (2012)**

The anger and psychological stress mayeffect on increasing progression of hypertension and coronary heart disease. Pre-hypertensive middle aged men who have high level of trait anger a tendency to experience anger across a range of situation are at increased risk of progressing to coronary heart disease. The analysis of 2,334 men and woman aged 45-64 years also found that long –term stress is associated with increased risk of coronary heart disease in both men and women.

The chronic stress as a state of prolonged tension from internal or external stressors, which may cause various physical manifestations. It can raise blood pressure, increase the risk of heart attack and stroke, increase vulnerability to anxiety and depression and hasten the aging process stress can alter the function of white blood cells involved in immune function. During chronic stress, cortisol is over produced, causing fewer receptor to be produced on immune cells so that inflammation cannot be ended.

The stress itself is a risk factor for health disease, it could be because chronic stress exposes your body to unhealthy persistently elevated levels of stress hormones like adrenaline and cortisol. It changes in the way blood clots, which increases the risk of heart attack. Stress promotes the accumulation of visceral fat, which in turn causes metabolic changes that contribute to heart disease and other health problems.

Charles (2010)

The psychological stress is one of the major risk factor for cardio-vascular disease. In recent years many psycho social stressors have been suggested as potential risk factor for coronary artery disease and strong evidence as been put forward for several personality factors such as type A behavior pattern, hostility and depression or social factors such as low socio-economic status and lack of social support.

The stress and heart diseases are interrelated. Stress is a normal fact of life. But if left unmanaged stress can lead to emotional, psychological and physical problems including coronary artery disease, high blood pressure, chest pain, irregular heartbeats.

Michel perussel (2010)

The progressive muscle relaxation is a particular type of relaxation exercise that requires a person to alternate between tening and relaxing different muscle groups throughout the body. Progressive muscle relaxation is purported to decrease the arousal of the autonomic and central nervous system and to increase parasympathetic activity. Practicing relaxation technique can reduce stress symptoms by slowing heart rate, lowering blood pressure and increasing blood flow to major muscles **(craske&barlow 2010).**

NEED FOR THE STUDY

Emotional stress is generally the kind of stress people are talking about when they say that stress causes heart disease. Coronary artery disease is the leading cause of death worldwide. Each year, heart disease is at the top of the list of the country's most serious health problem.

In US around 1 of every 6 deaths was due to cardiovascular disease. Each year an estimated 7, 85,000 Americans will have a new coronary attack and 4, 70,000 will have a recurrent attack. It is estimated than an additional 1, 95,000 silent first myocardial infarction each year. Approximately every 25 seconds, an American will have a coronary event. The measurement of stress among coronary artery disease patients, perceived stressors and revealed that 58% patients are suffered by emotional stress. **– Heming way (2012)**

Heart disease in emerged as one of the most important health problem in India in recent times.

The population is exposed to the risk of infection. The recent statistics available for heart diseases revealed 65.4/1000 males 47.8/1000 females were exposed to the risk of heart diseases in urban areas as against 22.8/1000 males and 17.3/1000 females in rural areas.

Mental stress is a multi-factorial process involving the environment, individual experiences and coping and set of neuro endocrine, autonomic, cardio vascular and other systemic physiologic responses. Patients with coronary heart disease, stress have also been implicated as an acute trigger of myocardial ischemia and infarction. **– Richard (2011)**

Between 2001 and 2011, 379 men experienced a ischemic heart disease event. The risk factors associated with the risk of ischemic heart disease age 95%, hypertension 92%, triglycerides 92% after contributing for risk factor the psychological stress dimension significantly altered the risk of ischemic heart disease **– Josee Savard (2011)**

The stress affecting the physical health. In this study people who suffered from ongoing stress had higher than normal morning levels of cortisol, which remained elevated throughout the day. Also those who reported greater stress were more likely to have lowered heart rate variability, indicating strain on the heart. The researcher found that the individual who experienced prolonged stress had a 68% higher risk of coronary artery disease.

The medical record of 326 individuals who had received medical examinations within the six-month period before they died from a sudden heart attack. Eighty six of the 326 examinations were done within the seven day period prior to death from heart attack. Not a single one of the 326 heart attacks had been predicted by physician. One of every 4 Americans has cardio – vacuolar disease, that converts to about 57 million Americans heart disease and stroke account for almost 6 million hospitalizations each year and cause disability for almost 10 million Americans age 65 years and older **- Dr. Lewis kauller (2010)**

One person in three suffers from some form of cardio vascular diseases due to psychological stress. This includes high blood pressure 6.5 million, coronary artery disease 1.3 million, stroke 5.5 million, congestive heart failure 5 million. More than 2,400 Americans die of cardio vascular disease each day. On average of one death every 37 seconds **– American Heart Association (2010)**

The survey indicated that approximately 8.6% of female and 9.1% of males residing in us having coronary artery disease **– Behavioral risk surveillance system (2010)**

A report “stress and cardiovascular disease, which concluded that, although acute catastrophic events might trigger acute myocardial infarction or sudden death. The stress consistently predicated the subsequent development of coronary heart disease. The report concluded that psychosocial risk factor had effects on conventional risk factors **– National heart foundation of Australia (2009)**

A survey was conducted by **M.Moshiri (2009)** in north India revealed that the prevalence of symptomatic coronary artery disease was 2.3% in the men and 1.5% in the women in the rural subjects, and 8.5% in the men and 3.4% in the women in the urban population. Coronary artery disease and coronary risk factors were two or three times higher among the urban compared with the rural subjects, which may be due to greater sedentary behavior and alcohol intake among urbans.

Meenakshmisharma (2011) stated that of particular concern India is not only the high burden of cardio vascular disease, but also the effect of these disease on the productive work force aged 35-65 years. Heart diseases are rising in Asian Indians 5-10 years earlier than in other populations around the world.

The mean age for first presentation of acute myocardial infarction in Indians is 53 years. Coronary artery disease that manifests at a younger age can have devastating consequences for an individual, family and society.

A strategy involving prevention of cardio-vascular disorders long before their onset will be more cost – effective than providing interventions at a stage when the disease is well established.

The coronary artery disease is the most common cause of death in India. Over a million people each year will have a heart attack and 25% will die before

they get to the hospital while or in the Emergency department prevention is the key to treatment of heart disease. The testing strategy to confirm the diagnosis and plan appropriate treatment needs to be individualized for each patient diagnosed with heart disease. Treatment of heart disease depends upon the severity of disease -**Daniel (2009)**

The women account for just over half of the total heart disease death in the north India each year, 18% women die from heart disease each year. 42% of women who have heart attacks die within 1 year, compared to 24% of men. Underage 45 women's heart attack are twice as likely as mensto be fatal **– Shinji Tanka (2008)**

So the researcher feels that it is very essential to alleviate stress among patient with coronary artery disease and make them to cope up with disease. Hence progressive muscle relaxation therapy may be an effective practice in reducing the level of stress among patient with coronary artery disease.

STATEMENT OF THE PROBLEM

"A STUDY TO EVALUATE THE EFFECTIVENESS OF PROGRESSIVE MUSCLE RELAXATION THERAPY ON STRESS AMONG PATIENTS WITH CORONARY ARTERY DISEASE IN RAGHAV HOSPITAL, APPAKUDAL, ERODE DISTRRICT".

OBJECTIVES OF THE STUDY

- To assess the level of stress among patient with coronary artery disease of experimental and control group in Raghav hospital, Appakudal, erode district.

- To evaluate the effectiveness of progressive muscle relaxation therapy on stress among patients with coronary artery disease in experimental group.
- To compare the posttest level of stress among patients with coronary artery disease of experimental and control group.
- To find out the association between pretest level of stress among patients with coronary artery disease with their selected demographic variables and clinical variables.

HYPOTHESIS OF THE STUDY

H_1 : There will be a significant difference between pretest and Posttest level of stress among patients with coronary artery Disease among the experimental group.

H_2 : There will be a significant difference in posttest level of stress level among patients with coronary artery disease among the experimental and control group.

H_3 : There will be a significant association between pretest level of stress among patient with coronary artery disease with their selected demographic variables and clinical variables.

OPERATIONAL DEFINITIONS

CORONARY ARTERY DISEASE

Coronary artery disease is a narrowing or blockage of the arteries and vessels that provide oxygen and nutrients to the heart. It is caused by atherosclerosis, an accumulation of fatty materials on the inner lining of arteries. The resulting blockage restricts blood flow to the heart. When the blood flow is completely cut off the result is a heart attack.

Jennifer moll (2012)

STRESS

Stress is body's reaction to a change that requires a physical, mental or emotional adjustment or response stress is caused by an existing stress – causing factor or "stressor"

Angela marrow (2011)

PROGRESSIVE MUSCLE RELAXATION THERAPY

Progressive muscle relaxation therapy is a particular type of relaxation exercise that requires a person alternate between tensing and relaxing different muscle group throughout the body.

Matthew tull (2011)

EVALUATE

Form an Idea of the amount, number or value of the study will assist in evaluating the impact of recent changes.

EFFECTIVENESS

In this study effectiveness refers to the extent to which the progressive muscle relaxation therapy has its impact on stress measured by questionnaire.

SASSUMPTIONS

- Patients with coronary artery disease may have stress.
- Progressive muscle relaxation therapy is helpful in reducing the stress.

LIMITATIONS

- The study was limited to patients with coronary artery disease.
- The date collection period was limited to 6 weeks only.
- The study was not been generalized, since it includes patients in selected hospitals.
- The sample of the study was restricted to 60.

CONCEPTUAL FRAME WORK

ROY'S ADAPTATION MODEL MODIFIED (1984)

The conceptual frame work for research study presents the reasoning on which the purposes of the proposed study are based. The frame work presents the perspective from which the investigator views the problems.

The conceptual frame work of the present study is based on Roy's adaptation model (modified) the model were introduced by sister Callista Roy she is a fellow in the American academy of nursing. Roy based her model on harry helson's work in psychophysics.

The conceptual frame work deals with the inter related concepts that are assessable together in same rational schemes by virtue of their relevance to a common theme.

INPUT

The stimuli like

- Focal stimuli : stress
- Contextual stimuli : age, sex, education, food pattern., habit, martial status, occupation, income religion living area and altered nutrition, fear and anxiety social support.
- Residual stimuli: past experiences, previous hospitalization lack of knowledge, fear of death.

CONTROL

Individuals have biological abilities to cope with the changing environment.

COPING MECHANISMS

Coping mechanism used by the patients are depressed and tensed.

REGULATOR SUBSYSTEM

The regulator subsystem (PMRT) responds automatically through neuro chemical process. During PMRT heart rate, respiratory rate, muscle tension and blood pressure was decreased.

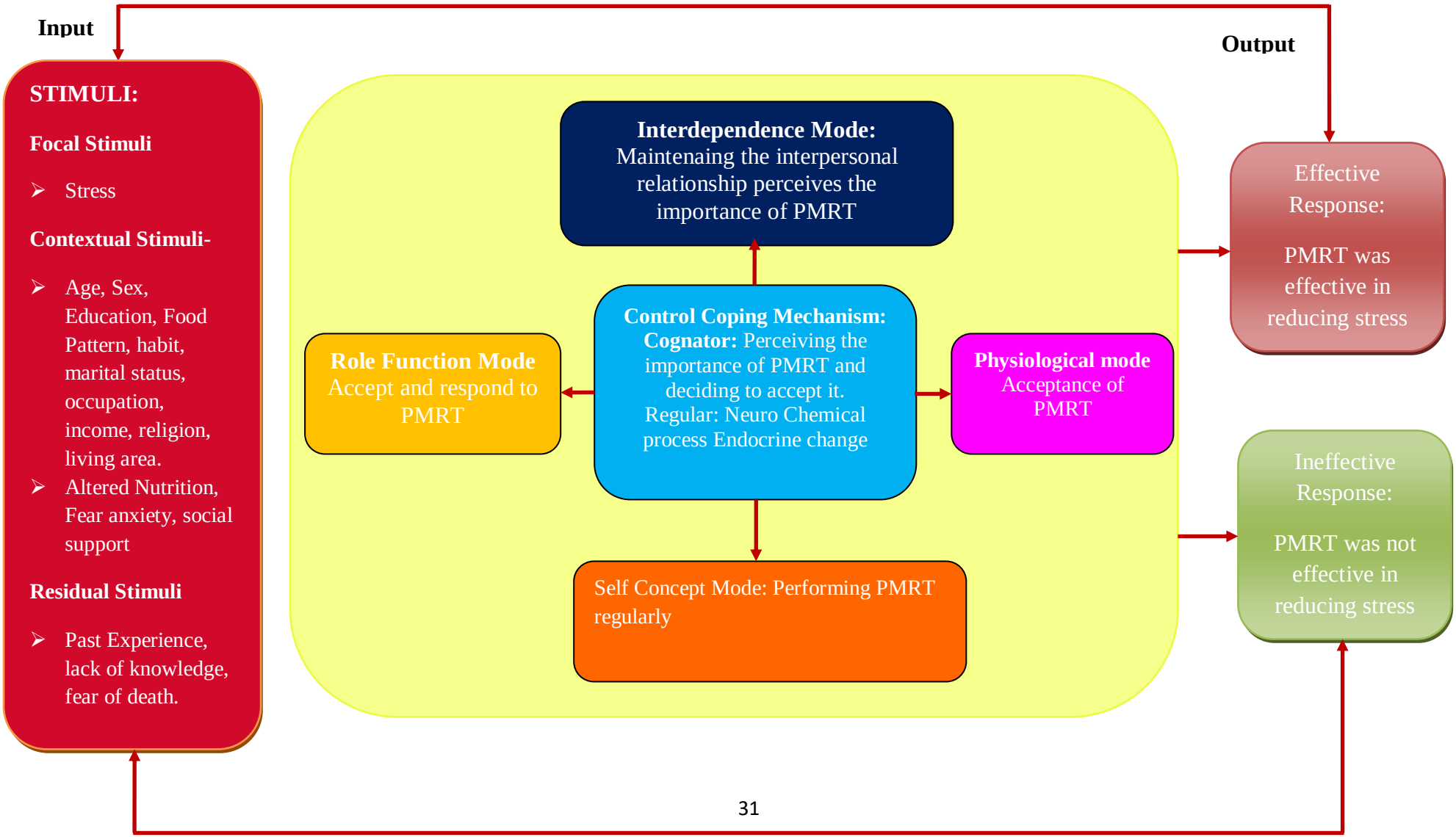
COGNATOR SUBSYSTEM

The cognate subsystem responds through higher, complex process of perception, informational processing, judgements and emotion. The patients uses the cognator subsystem during stress by perceiving the information given by the care provider, in this study, the patients cooperating and welcoming the progressive muscle relaxation therapy.

OUTPUT

Output is the outcome of the process, it may be the adaptive response or non-adaptive response. In this study, the adaptive response progressive muscle relaxation therapy was effective in reducing the stress and non-adaptive response, progressive muscle relaxation therapy was not effective in reducing stress.

MODIFIED ROY ADAPTATION MODEL, 1984 (CONCEPTUAL FRAME WORK)



CHAPTER – II

REVIEW OF LITERATURE

Review of relevant literature as evidenced is the essential back ground for any research. It refers to both the activities involved in searching for information on a topic as well as to the actual written report that summarizes the state of the existing knowledge on a topic in generally facilitated by the use of various obstructing and indexing services.

The investigator did an extensive review of the research and non-research literature related to the present study and made on attempt to contribute to a deep insight into problem area and methodology. In order to accomplish the goal in the present study, an attempt has been made to review and discuss the literature under following sub headings.

- Literature related to coronary artery disease.
- Literature related to stress.
- Literature related to progressive muscle relaxation therapy.

1.LITERATURE RELATED TO CORONARY ARTERY DISEASE

ED Janus (2017)conducted a cross sectional survey of two randomly selected villages to determine and compare the prevalence of coronary artery disease and coronary risk factors in both a rural and urban population in North India. The study result revealed that the overall prevalence of coronary artery disease was 9.0% in the urban and 3.3% in the rural population. Coronary artery diseases are higher among the urban compared with the rural peoples, which may be due stressful life patterns.

Jane morley (2015) conducted a randomized controlled trail of 201 black men and women with coronary heart disease who were randomized to the transcendental meditation program or health education. The primary end point was the composite of all cause mortality. Myocardial infarction or stroke. Secondary end points included the composite of cardio vascular mortality, revascularizations and cardio vascular hospitalization, blood pressure and life style behaviors. During an average follow up there was a 48% risk reduction in the primary end point in the TM group and 24% risk reduction in the secondary end point. There were reductions of 4.9 mm Hg in systolic blood pressure and anger expression.

S Tahvildari (2010) conducted a descriptive cross-sectional survey was conducted involving 3000 healthy adults at 18 years of age or above who were recruited with cluster random sampling. Demographic data and risk factors were determined by taking history, physical examination and laboratory tests. The average age was 36.23 + 15.26. there was 1381 female (46%) and 1619 male (54%) out of which 6.3% were diabetic, 21.6% were smoker, and 15% had positive familial heart disease history. 61% had total cholesterol level > 200 mg/dl, 32% triglyceride >200 mg/dl, 47.5% LDL -c > 130 mg/dl, 5.4% HDL c <35 mg/dl, 13.7% systolic blood pressure > 140 mm Hg, 9.1% diastolic blood pressure > 90 mmHg and 87% of them were physically inactive.

Aaron R.Folsom (2014) conducted a prospective study of hemostatic factors and incidence of coronary heart disease atherosclerosis risk in communities study recruited 14,477 adults from 45 to 64 years of age who were

initially free of coronary heart disease. Coronary disease risk factors and several plasma homeostatic factors were measured, and incidence of coronary heart disease was ascertained during an average follow-up of 5.2 years. Age-, race-, and field center – adjusted relative risks of coronary heart disease were significantly elevated ($p<.05$) per higher value of fibrinogen (relative risk: men, 1.76; women, 1.54), white blood cell count (men, 1.68; women, 2.23), factor VIII coagulant activity (women, 1.25), and von Willebrand factor antigen (men, 1.20; women, 1.18). adjustment for other risk factors attenuated these associations for fibrinogen (adjusted relative risk; men, 1.48; women, 1.21), and it eliminated the white blood cell count, factor VIII, and von Willebrand factor associations, consistent with the other risk factors either confounding or partly operating through their effects on the hemostatic variables. Adjusted standardized relative risks of total mortality, ranging from 1.13 to 1.37, were also elevated ($p<.05$) in relation to these four factors. There was no association of coronary disease incidence with factor VII, protein C, antithrombin III, or platelet count.

FazRollah (2012) reported that coronary artery disease is the most common cause of sudden death and is also the most common reason for death of men and women over 20 years of age. According to the Guinness book of records, Northern Ireland is the country with the most occurrences of coronary artery disease. By contrast, the maasai of Africa have almost no heart disease.

Cleveland clinic (2010) found a region on chromosomes, 17 was confined to families with multiple cases of myocardial infarction. A more controversial link is that between Chlamydophila pneumoniae infection and atherosclerosis. While

this intra cellular organism has been demonstrated in atherosclerotic plaques, evidence is inconclusive as to whether it can be considered a causative factor treatment with antibiotics in patients with proven atherosclerosis has not demonstrated a decreased risk of heart attack or other coronary vascular diseases.

1. LITERATURE RELATED TO STRESS

Bernard cantin (2018) conducted a study to assess the relationship between psychological stress and Ishemic heart disease incidence in a population of 868 men over a particular follow up period. They also underwent a medical examination and provided information on IHD risk factors. The results shows that 79 men experienced a first IHD event. The following risk factors were associated with the risk of IHP age 95%, hypertension 95%, triglycericles 95%. High density lipoprotein 95% and stress 92%. The study suggests that there is important connection between the explored stress dimensions and IHD incidence.

Elizabeth klodas (2015) conducted a study to examine the effect of work stress on heart disease in people ages 35-55 years. To determine how the autonomic nervous system, which regulates the organs and hormones, responds to a prolonged state of stress, researcher checked levels of cortisol, a stress hormone and assessed heart rate variability, a measure of heart health. in this study people who suffered from ongoing work stress had higher than normal morning levels of cortisol. Which remained elevated throughout the day? The study revealed that the individuals who experienced prolonged work stress had a 76% higher risk of coronary artery disease.

Mikakivimalci (2014) reported that the physiological reaction to psychological stress, involving the hypothalamic pituitary – adreno medullary axes is well characterized. Epidemiological data show that chronic stress predicts the occurrence of coronary heart disease. The short term emotional stress can act as a trigger of cardiac events among individuals with advanced atherosclerosis. A stress – specific coronary syndrome, known as transient left ventricular apical ballooning cardio myopathy on stress cardio myopathy also exist. Among patients with CHD 72% acute psychological stress has been shown to induce transient myocardial ischemia 36% long-term stress can increase the risk of recurrent CHD events and mortality.

Heming way (2013) reported that 32% of the effect of work stress on CHD can be explained by the effect of work stress on health behavior and metabolic syndrome. The association between work stress and CHD was stronger among employees younger than 50 and those still in employment. An important case control study of 11119 patients with a first MI and 13648 age and sex matched controls in 52 countries found that "permanent stress" at work was associated with over twice the odds of MI compared with reporting no stress at work. The study demonstrates that stress at work can lead to CHD through direct activation of neuro endocrine stress path ways and indirectly through health behaviors.

Western collborative group study (2010) revealed that type of individuals tended to have higher levels of adrenaline and nor adrenaline and higher levels of blood cholesterol than type B. the secretion of adrenaline and nor -adrenaline is part of the physiological stress response when the hypothalamic

pituitary adrenal axis activated. These hormones increase the level of fatty acids in the blood may lead to the fatty material being deposited on the walls of the arteries which supply the heart with blood. This narrows the arteries and reduces the flow of oxygen carried in the blood to the heart.

Marmot (2008) conducted a study to identify the link between responses to stress and heart disease that has been examined in children. He used physiological measures such as blood preasure and a standard hostility questionnaire and structured interview, similar to that used in the western study. Three years later the children who scored most highly on the tests for hostility were three times more likely to have developed "metabolic syndrome" a collection of risk factors including obesity insulin resistance and high blood pressure which together can lead to heart disease / diabetes.

Hadzipesic (2007) conducted a study to explore the role of acute and chronic stress in development of CHD. Two groups of examinees were studied. A control group of 170 healthy person and experimental group of 170 patients with CHD. The group of patients with CHD consisted of 75 patients after acute myocardial infarction and 75 patients after aorta coronary by pass surgery. A semi-standardized interview was used to assess the existence of acute of chronic stress in the studied examinees. The data showed that chronic stress, is an important risk factor in development of CHD.

Borger R.L (2007) conducted a study to assess the association between stress and risk of coronary heart disease. A meta-analysis of references derived from pub Med. Embase was performed without language restrictions. End points

were cardiac death, myocardial infarction and cardiac events. The author selected prospective studies of cohorts of initially health person in which stress was assessed at baseline. Twenty studies reporting on incident CHD comprised 249, 846 person with a mean follow up period. Stress persons were at risk of CHD (hazard ratio random: 1.26; 95% confidence interval: 1.15 – 1.38; $p<0.0001$) and cardiac death (hazard ration: 1.48; 95% confidence internal 1.14 – 1.192; $p=0.003$) stress seemed to be an independent risk factor for incident CHD and cardiac mortality.

3. LITERATURE RELATED TO PROGRESSIVE MUSCLE RELAXATION THERAPY

Tayloe – E (2017) conducted a study to examine the efficancy of abbreviated progressive muscle relaxation to enhance physiological and psychological functioning among high – stress college students. Participants (n=128) were under graduates, 19 years old on average, predominantly female and white, with high perceived stress scale scores. After random assignment for 20 minutes, 66 experimental group participants underwent APMR lying down and 62 control group participants lied down quietly. Compared with the control group, the experimental group demonstrated significantly greater increases in mental and physical relaxation, and normalized heart rate variability. These finding indicate an APMR intervention can have significant short – term effects, both reducing detrimental and enhancing beneficial functioning in high stress college students.

Judith A Collins (2011) conducted prospective quasi experimental study to examine the effect of progressive muscle relaxation and guided imagery on

psychological and physiologic outcomes in adults with cardiovascular disease who were participating in a phase II cardiac rehabilitation program. Fifty patients who with in the preceding 12 weeks had acute myocardial infarction or coronary artery bypass surgery or both, studied during 6 weeks of participation in a phase II cardiac rehabilitation program. More instruction sessions on the relaxation method may have resulted in more positive outcomes. However, within the group scores for interpersonal sensitivity and depression, the reduction in heart rate and the receptivity of subjects tot his intervention suggest that it may be a feasible and helpful adjunctive therapy for participants in a phase II cardiac rehabilitation program.

Sau fung (2016) conducted a study on effects of progressive muscle relaxation training on psychological and health – related quality of outcomes in elderly patients with heart failure. A sample of elderly HF patients (n=121) was randomly assigned to either ther experimental (n=59) or the control groups (n=62) by using doubly multivariate analysis of covariance, the experimental group showed greater improvement in the composite outcomes of psychological distress and health related quality of life (p=0.007).

Kenneth shapiro (2016) stated the effect of progressive muscle relaxation and of attention control were investigated in a prospective randomized trail of border line or mild hypertensive patients. Both groups received placebo and had the same number of clinic return visits. After 22 weeks, the average mean home BP, on PMRT decreased 3 mm Hg, whereas in control group BP increased 2 mm Hg, progressive muscle relaxation had no significant effect on the clinic BP. The

response to PMRT was not uniform. However, relaxation may be suitable for young, anxious patients with mild hypertension who have a high resting sympathetic tone.

Lahmann C (2015) conducted a study to examine the efficacy of progressive muscle relaxation on change in blood pressure, lung parameters and heart rate in female adolescent asthmatics. In a prospective, randomized, double blind, controlled study, adolescent female asthmatics (n=312) were tested to find out how the systolic blood pressure, forced expiratory volume in the first second, peak expiratory flow and heart rate change after PMRT. The control group (n=30) received a placebo intervention. A significant reduction in SBP and significant increase in the FEV (1) and PEF. PMRT appears to be effective in improvement of blood pressure, lung parameter and heart rate in adolescent female asthmatics.

Saeed sadeghian (2012) conducted a study to evaluate the effect of PMRT in decreasing anxiety and improving quality of life among anxious patients after coronary artery bypass surgery. The study was an open uncontrolled trail. The sample included 110 anxious patients referred to the cardiac rehabilitation clinic patients were allocated to receive both exercise (relaxation group) training and lifestyle education plus relaxation therapy (n=55) or only exercise training beside lifestyle education control group n=55. Significant reduction in state anxiety ($p<0.01$) and trait anxiety ($p<0.01$) levels were observed in relaxation group after intervention compared to control group. The findings show the PMRT may be an effective therapy for improving psychological health and quality of life in anxious heart patients.

Lee DT (2011) conducted a longitudinal, randomized and controlled study to examine the effect of PMRT on the psychologic status and symptoms of older Chinese patients with heart failure. 59 patients were allocated to receive a PMRT program and 62 were provided with the attention placebo. A medium effect on psychologic distress in favor of the PMRT program was detected. PMRT seems to be useful as an adjunctive non-pharmacologic treatment modality in the management of heart failure.

Alireza (2010) conducted a randomized controlled trial to assess the effectiveness of progressive muscle relaxation training in the clinical management of chemotherapy – related nausea and vomiting as an adjuvant intervention to accompany pharmacological antiemetic treatment. Seventy – one chemotherapy – naïve breast cancer patients of an outpatient oncology unit with 38 subjects randomized to the experimental group and 33 to the control group. The intervention included the use of PMRT hr before chemotherapy was administered and daily thereafter for another 5 days each session lasted fro 25 min and was followed by 5 min of imagery techniques. The use of PMRT considerably decreased the duration of nausea and vomiting in the experimental group compared with the control group ($p<0.05$), whereas, there were trends toward a lower frequency of nausea and vomiting ($p=0.07$ and $p = 0.08$ respectively). Neither nausea nor vomiting differed in intensity between the two groups. The significant effects were mainly evident on the first 4 post – chemotherapy days, when differences were statistically significant. Although there was a significantly less severe overall mood disturbance in the experimental group over time

($p<0.05$), this did not apply in the case of anxiety. Such findings suggest that PMRT is a useful adjuvant technique to complement antiemetics for chemotherapy – induced nausea and vomiting and that incorporation of such interventions in the care plan can enhance the standards of care of cancer patients who experience side effects of chemotherapy.

Sermsaklolak (2008) conducted the prospective, randomized controlled trail to examine the effect of PMRT on anxiety and depression in patients with chronic breathing disorders receiving pulmonary rehabilitation. 83 subjects with chronic breathing disorders entering the 8 week pulmonary rehabilitation program (PR) were randomly assigned to a standard care or intervention group. The standard program included 2 days per week of exercise, education and psychosocial support delivered by multi disciplinary team. The intervention group and depression received additional sessions of PMRT. For anxiety and depression there was an overall significant improvement within each group over time ($p<0.001$). the finding suggest that adding structural PMRT to a well established PR program may not control additional benefit in the further reduction of anxiety and depression in patients receiving PR.

Heather (2008) conducted a comparative study on Bio feed back, antogenic training progressive relaxation in the treatment of Ray Naud's disease. Twenty-one female patients suffering from diagnosed idiopathic Raynaud's disease were trained to raise digital skin temperature using either autogenic training, progressive muscle relaxation, or a combination of autogenic training and skin temperature feedback. Patients were instructed in the treatment

procedures in 3, one hour group sessions spaced one week apart. All patients were instructed to practice what they had learned twice a day at home. Patients kept records of the frequency of vasospastic attacks occurring over a four-week baseline period, and during the first four weeks and the ninth week of training. In addition, patients underwent 4 laboratory cold stress tests during which they were instructed to maintain digital temperature as the ambient temperature was slowly dropped from 26 degrees to 17 degrees C. cold stress tests were given during week 1 of baseline and during weeks 1,3 and 5 of training. No significant differences between the three behavioral treatment procedures were obtained. In addition, the ability of patients to maintain digital temperature during the cold stress challenge showed significant improvement from the first to the last tests. Symptomatic improvement was maintained by all patients 9 weeks after the start of training.

Khanna etal (2007) conducted a study aimed at comparing the efficacy of 2 relaxation techniques in reducing pulse rate among highly stressed females, 30 highly stressed female subjects were selected and randomly assigned to three groups. Group 1 receiving galvanic skin resistance bio feedback, group 2 receiving progressive muscle relaxation training whereas group 3 control, the stress level that was determined by using comprehensive anxiety test questionnaire. Pulse rate was measured before and after training on day 1 and day 10. Results indicate that progressive muscle relaxation training can significantly reduce high pulse rate as compared to other two groups.

Liza varvogli (2007) conducted a study to identify the effects of learning and practicing PMR in a population of cardiac rehabilitation patients. Blood pressure and heart rate data, and scores on the spielberger state – trait Anxiety inventory (STAI) were collected from a treatment group and a control group of patients enrolled in phases II and III of cardiac rehabilitation. Analysis of the data revealed positive effects of PMR on the variables heart rate and state of anxiety. In addition, written evaluations of PMR from patients in the treatment group indicated a high degree of subjective satisfaction with PMR as a means to reduce stress in their lives.

L.Connoro (2007) compares the effectiveness of music and PMRT for anxiety in COPD. This study aims to evaluate the acute effects of music and progressive muscle relaxation (PMR) in hospitalized COPD subjects after a recent episode of exacerbation. A randomized controlled study was performed of pre-test design after recruiting 82 COPD subjects. All patients were admitted for acute exacerbation and were medically stabilized. After being screened for the inclusion and exclusion criteria, 72 subjects were selected for the study. Music group listened to a self selected music of 60-80 beats per minute for 30 minutes. PMR group practiced relaxation through a pre-recorded audio of instructions of 16 muscle groups. There was statistically significant main effect across the sessions for state anxiety (F=62.621, p=0.000), trait anxiety (F=19.528, p=0.000), dyspnea (F=122.227, p=0.000), SBP (F=63.885, p=0.000), PR (F=115.780, p=0.000) and PR (F=202.977, p=0.000). There was statistically significant interaction effect between the two groups for state anxiety (F=6.024, p= 0.003), trait anxiety

(F=8.222, p=0.000), dyspnea (F =10.659, P=0.000), SBP (F= 12.889, p=0.000), PR (F=4.746, p=0.008) and PR (F= 12.078, p=0.000). There were greater changes observed after the second session in both groups, however, change in DBP was not significant in either group. Music and PMR are effective in reducing anxiety and dyspnoea along with physiologic measure such as SBP, PR and PR in two sessions in COPD patients hospitalized with exacerbation. However, reductions in the music group were greater compared to the PMR group.

D. Holmes (2007) conducted a study to determine the tensing portion of progressive relaxation initiates the valsalva response in order to establish the safety of the procedure for acutely ill cardiovascular patients. Sixty health adult volunteers performed fist, chest, and abdominal tensing and relaxation while their heart rate was continuously monitored. Occurrence of the valsalva response was determined by dividing peak tachycardia during tensing by maximum bradycardia during releasing the tension. A valsalva ratio greater than 1.5 indicated presence of the valsalva response. 43% of the sample exhibited the valsalva response.

Maynard (2006) conducted an evaluation of PMRT on stress related symptoms in a geriatric population the 10 highly anxious women, between the ages of 69 and 84, participated in a five month designed to test the hypothesis that progressive muscle relaxation would reduce psychosocial stress in a group of high risk senior citizens. 5 women were assigned to the treatment group and 5 to a control group. All participants were evaluated prior to training, at the end of training, and ten weeks after training. Participants were also measured on the following factors: 1) state and trait anxiety, 2) self-report muscle tension,

3) hours to fall asleep, 4) number of nocturnal awakenings, and 5) headaches. Results indicate significant differences on all five measures between the experimental and control group. With the exception of trait anxiety, the experimental group manifested significant improvements on the remaining five measures from baseline to end of training. For state anxiety, a significant improvement continued during the ten weeks of home practice following the end of training.

CHAPTER – III

METHODOLOGY

METHODOLOGY

Methodology is the major phase of research in which the investigator makes a number of decisions about the methods and materials to be used to study the research problem basically through the collection of data. These methodological decisions generally have implications for the validity and reliability of the study findings.

(Polit and Hungler, 1999)

The Methodology includes descriptions of research approach, research design, site and setting, sampling technique, development of the tool, validation of the tool and the reliability, methods of data collection, pilot study and plan for statistical analysis.

The present study aimed to evaluate the effectiveness of progressive muscle relaxation therapy on stress among patients with coronary artery disease in Raghav hospital, Erode district.

RESEARCH APPROACH

Research approach is the most significant part of any research. The appropriate choice of the research approach depends on the purpose of the research study which is undertaken quantitative approach – evaluative approach.

RESEARCH DESIGN

For this study the research design chosen is quasi experimental design- which includes manipulation, control and no randomization.

SCHEMATIC REPRESENTATION OF THE RESEARCH DESIGN

Quasi experimental design

Group	Pre assessment	Intervention	Post assessment
Experimental	O_1	x	O_2
CONTROL	O_1	-	O_2

Key

O_1 - pre test of level of stress among patients with coronary Artery disease

X - Progressive muscle relaxation therapy.

O_2 - post test of level of stress among patients with coronary Artery disease

VARIABLES

Polit (2004), variables are qualities, properties or characteristics of persons, things or situations that change or vary. Variables are also concepts of different levels of abstraction that are concisely defined to promote their measurement or manipulation with in a study.

- **INDEPENDENT VARIABLE**

  Progressive muscle relaxation therapy is the independent variables.

- **DEPENDENT VARIABLE**

  Level of stress among patients with coronary artery disease is dependent variables.

- **EXTRANEOUS VARIABLE**

  Extraneous variables in this study are age, sex, education, food pattern, habits, marital status, occupation, monthly income, religion, and living area.

SITE AND SETTING

SITE

The site selected for present study is Raghav Hospital, Appakudal, Erode District.

SETTING

The setting selected for present study is Coronary Care Unit (CCU).

POPULATION

All cardiac patients in Raghav hospital Appakudal erode district.

SAMPLE

Coronary artery disease patients who fulfill the inclusion criteria.

SAMPLE SIZE

60 samples in that 30 were in experimental and 30 were I control group.

SAMPLING TECHNIQUE

Non – probability sampling technique was used, in that convenience sampling was done.

CRITERIA FOR SAMPLE SELECTION

INCLUSION CRITERIA

- The coronary artery disease patients were in the hospital during the study
- The Patients are above the age of 30 years, Both Gender
- Are willing to participate in study.
- Can understand and speak Tamil or English.

EXCLUSION CRITERIA

- Patients with other cardio vascular disorders.
- Patients with pacemaker.
- Patients who are not willing to participate.
- Patients underwent cardio-thoracic surgery.
- Patients who is on ventilator.
- Acutely ill cardio-vascular patient.
- Patients who are practicing other related therapies.

SELECTION AND DEVELOPMENT OF THE TOOL

Trace and track emphasized that the instrument selected in research should be as far as possible of the vehicle that would be best to obtain data for drawing conclusions that are pertinent to study.

The tool was divided into three parts. A rating scale was prepared based on the literature review and in consolation with the experts in the field of medical – surgical nursing.

DESCRIPTION OF DATA COLLECTION INSTRUMENT

The instrument used for data collection was organized into 3 sections.

Section 1 : Demographic variables

Section 2 : Clinical variables

Section 3 : Rating scale

SECTION 1: DEMOGRAPHIC VARIABLES PROFORMA

The demographic proforma consists of 10 items which are age, sex, education, food pattern, and habit, and marital status, type of occupation, monthly income, religion and living area.

SECTION 2: CLINICAL VARIABLES

It consists of selected clinical variables like temperature, pulse, respiration, oxygen saturation and blood pressure of the patient.

SECTION 3: RATING SCALE

The stress rating scale questions were in the statement form. There were four options in the scale like never, sometimes fairly often, very often having 0,1,2,3 scores respectively.

SCORE INTERPRETATION

Mild	:	0-30
Moderate stress	:	31-60
Severe	:	above 60

The scale was designed to determine the different level of stress that was categorized under the following areas.

Subsection I	:	10 questions related to physical.
Subsection II	:	10 questions related to psychological.
Subsection III	:	10 questions related to social.

VALIDITY AND RELIABILITY

VALIDITY

Polit and Hungler (2004) states that content validity refers to the degree to which an instrument measure what it is suppose to measure. The validity of tool was established in consultation with experts, physicians, medical – surgical nursing experts. Tool was modified according to the suggestion and recommendation of the experts.

RELIABILITY

The reliability of the instrument was estimated by karl pearson co – efficient correlation. The reliability value of the instrument was (r=0.9) and it was found to be reliable.

PILOT STUDY

Polit (2004) a pilot study is a small scale version of a purposed study conducted to refine the methodology. It is designed to acquaint the researcher with the problems to be corrected in preparation for the layer research project and try out the problems for collecting the data. Pilot study was conducted to ensure validity and reliability of the tool and feasibility for giving intervention.

Pilot study was conducted with 6 samples after obtained permission from the respected hospital and prior information was given to the participants and study was conducted. The purpose of the study was explained to the subjects. Data analysis was done by using descriptive inferential statistics and found that the study was feasible. (r=0.99)

DATA COLLECTION PROCEDURE

After completion of the pilot study, written permission was obtained from Raghav Hospital, Appakudal, Erode (DT) for conducting research study. The feasibility of conducting the research was ensured. The study was conducted 6weeks and consent was obtained from the patients. The information pertaining to demographic and clinical data was collected. Pretest was conducted with the help of structured questionnaire to assess the level of stress among coronary artery disease patients. After the pretest experimental group underwent progressive muscle relaxation therapy on the same day and for 5 consecutive days. All the selected coronary artery disease patients were informed regarding posttest which was scheduled exactly after 5 days of administration of progressive muscle relaxation therapy. Posttest was done on the same group with the help of same structured questionnaire which was used in the pretest for both experimental and control group.

PLAN FOR STATISTICAL ANALYSIS

Data analysis is the systematic organization and synthesis of research data and testing of research hypothesis using those data.

The data obtained was planned to be analyzed on the basis of the objectives of the study using descriptive and inferential statistics.

- Organize data in master coding sheet.
- Demographic and clinical variables are to be analyzed in terms of frequencies and percentage.

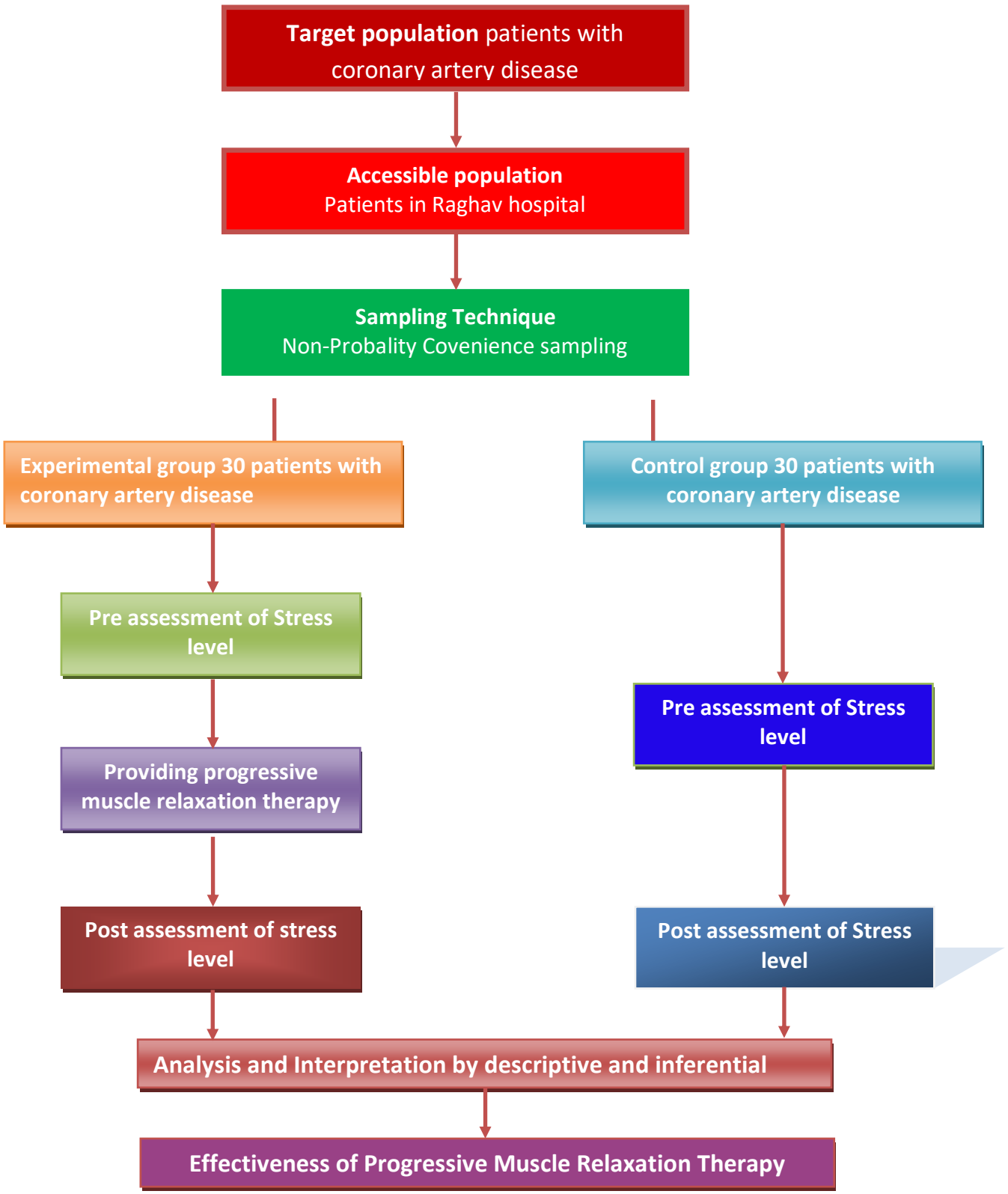
- Stress scores are to be presented in from of mean, mean percentage and standard deviation.
- Chi-square test was used to determine the association between level of stress and demographic, clinical variables.

Sl.No	Data Analysis	Methods	Remarks
1	Descriptive	Mean, standard deviation, percentage	Assess the level of stress among patients with coronary artery disease.
2	Inferential statistics	Paired 't' test	Comparison of pretest and posttest level of stress among experimental and control group.
		Unpaired "t" test	Comparison of posttest level of stress between experimental and control group.
		Chi-square test	Analysis the association between their selected demographic variables and clinical variables

ETHICAL CLEARANCE

- The study was performed after getting approval from the principal, DMIPSR college of Nursing.
- Permission was obtained from the medical director of selected hospital.
- The purpose of the study was explained to the subjects and interview was conducted after assuring confidentiality.

SCHEMATIC REPRESENTATION OF THE STUDY DESIGN



CHAPTER – IV

ANALYSIS AND INTERPRETATION

Analysis is the process of categorizing, organizing, manipulating and summarizing the data to obtain answers to research question. The purpose of analysis to reduce data to intelligible and interpretable form which the relations of research problem can be studied and tested.

Polit (2004)

Statistical analysis

The data obtained was classified, tabulated and the following analysis was performed in fulfilling the objectives of the study. The analysis involves the translation of the information collected during the course of the research project into interpretable, convenient and descriptive terms and to draw inferences from them using statistical methods. The purpose of analysis is to summarise, compare and test the proposed relationships and inferential findings.

Objectives of the study

- To assess the level of stress among patients with coronary artery disease of experimental and control group in Raghav hospital, Appakudal, Erode district.
- To evaluate the effectiveness of progressive muscle relaxation therapy on stress among patients with coronary artery disease in experimental group.
- To compare the posttest level of stress among patients with coronary artery disease of experimental and control group.

- To find out the association between pretest level of stress among patients with coronary artery disease with their selected demographic variables and clinical variables.

Organization of findings

Section- I	Distribution of demographic variables of respondents. Distribution of clinical variables of respondents.
Section- II	Assess the level of stress among patients with coronary artery disease of experimental and control group in Raghav hospital, Appakudal, Erode district.
Section -III	Evaluate the effectiveness of progressive muscle relaxation therapy on stress among patient with coronary artery disease in experimental group.
Section -IV	Compare the posttest level of stress among patients with coronary artery disease of experimental and control group.
Section -V	Find out the association between pretest level of stress among patients with coronary artery disease with their selected demographic variables and clinical variables.

Hypothesis of the study

H_1 : There will be a significant difference between pretest and Posttest level of stress among patients with coronary artery Disease of experimental group.

H_2 : There will be a significant difference in posttest level of stress level among patients with coronary artery disease of experimental and control group.

H_3 : There will be a significant association between pretest level of stress among patient with coronary artery disease with their selected demographic variables and clinical variables.

SECTION 1

DISTRIBUTION OF SAMPLES ACCORDING TO SELECTED VARIABLES

(N = 60)

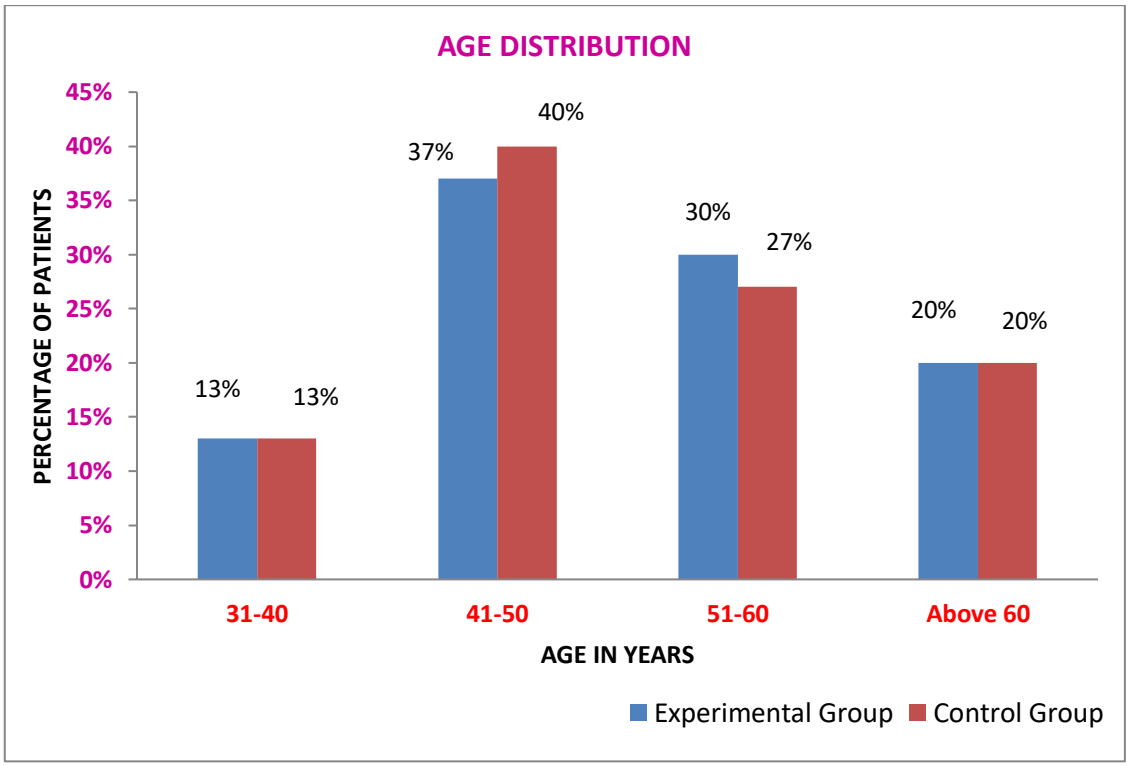
TABLE – 1 FREQUENCY AND PERCENTAGE DISTRIBUTION OF SAMPLE ON DEMOGRAPHIC VARIABLES

S. No	Demographic variables	Experimental group (n=30)		Control group (n=30)	
		Frequency	Percentage	Frequency	Percentage
1.	**Age (in years)**				
	a) 31 – 40	4	13%	4	13%
	b) 41 – 50	11	37%	12	40%
	c) 51 – 60	9	30%	8	27%
	d) Above 60	6	20%	6	20%
2.	Sex				
	a) Male	18	60%	16	53%
	b) Female	12	40%	14	47%
3.	Education status				
	a) Illiterate	13	43%	16	53%
	b) Primary education	11	37%	8	27%
	c) Secondary education	3	10%	4	13%
	d) Graduate	3	10%	2	7%
4.	Food pattern				
	a) Vegetarian	2	7%	2	7%
	b) Non-vegetarian	28	93%	28	93%
5.	Habit				
	a) Smoking	3	10%	2	7%
	b) Alcohol	0	0%	1	3%
	c) Smoking&alcohol	11	37%	10	33%
	d) None	16	53%	17	57%
6.	Marital status				
	a) Married	27	90%	26	87%
	b) Unmarried	1	3%	1	3%
	c) Divorced	0	0%	2	7%
	d) Widow / widower	2	7%	1	3%

S. No	Demographic variables	Experimental group (n=30)		Control group (n=30)	
		Frequency	Percentage	Frequency	Percentage
7	Type of occupation				
	a) Business	4	13%	12	40%
	b) Government employee	5	17%	3	10%
	c) Private sectors	9	30%	7	23%
	d) Other	12	40%	8	27%
8	Monthly income				
	a) Below Rs 5,000/-	10	33%	10	33%
	b) Rs 5,000 – Rs 10,000/-	11	37%	15	50%
	c) Rs 10,001 – Rs 15,000/-	7	23%	3	10%
	d) Above Rs 15,000/-	2	7%	2	7%
9	Religion				
	a) Hindu	23	77%	28	93%
	b) Christian	4	13%	2	7%
	c) Muslim	2	7%	0	0%
	d) Other	1	3%	0	0%
10	Living Area				
	a) Urban	10	33%	26	87%
	b) Rural	17	57%	4	13%
	c) Tribe	3	10%	0	0%

Figure: 3

BAR DIAGRAM SHOWING THE DISTRIBUTION OF SAMPLE PERCENTAGE ACCORDING TO AGE

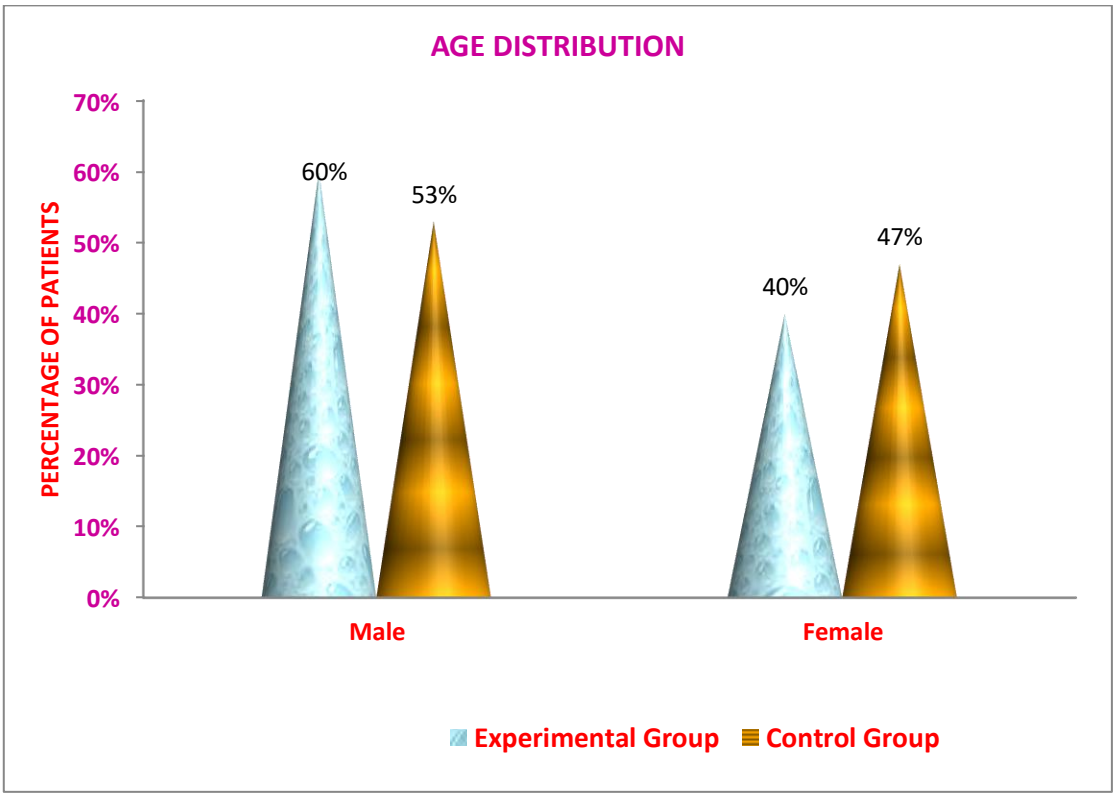


The data presented in the above diagram is according to age of patients in experimental group, 1 (37%) of the samples are in the age group of 41-50 years, 9(30%) of the samples are in the age group of 51-60 years, 6(20%) of the samples are in the age group of above 60 years and 4(13%) of the samples are in the age group of 31-40 years.

Similarly, in control group 12(40%) of the samples are in the age group of 41-50 years, 8(27%) of the samples are in the age group of 51-60 years, 6(20%) of the samples are in the age group of above 60 years and 4(13%0 of the samples are in the age group of 31-40 years.

FIGURE: 4

CONICAL DIAGRAM SHOWING THE DISTRIBUTION OF SAMPLE PERCENTAGE ACCORDING TO SEX

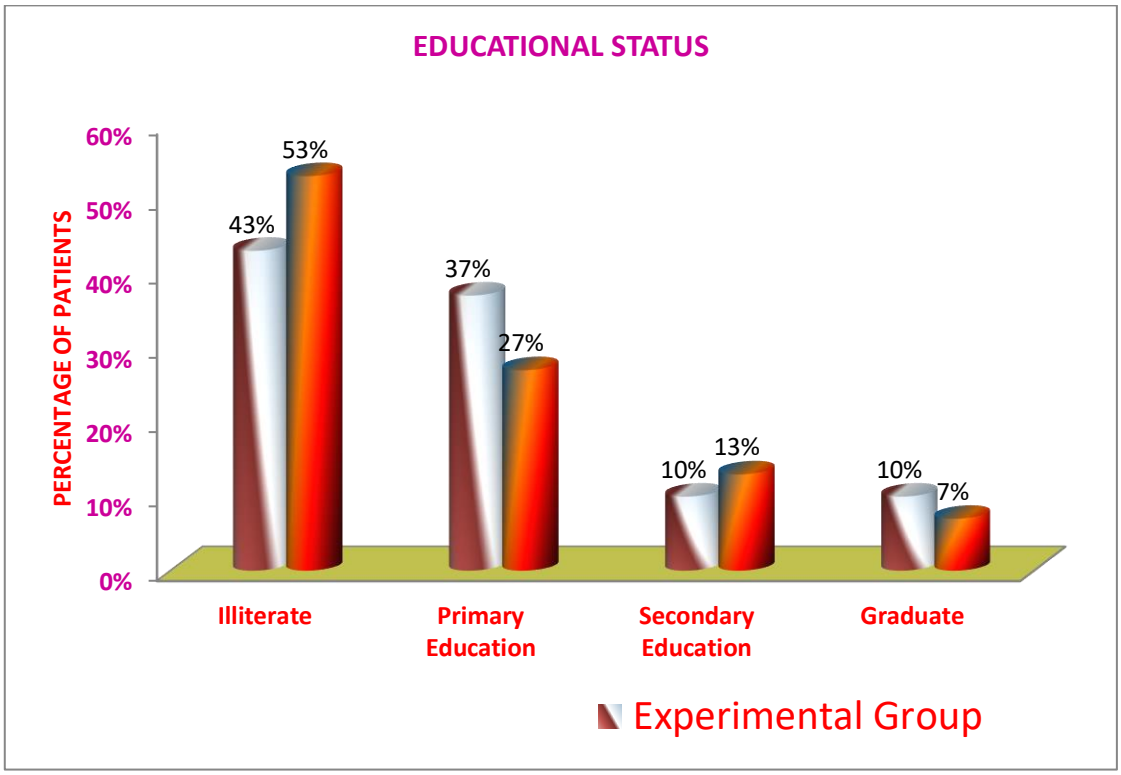


The above diagram represents gender of patients in experimental group 18(60%) of the samples are male patients and 12(40%) of the samples are female patients.

Similarly, in control group, 16(53%) of the samples are male patients and 14(47%) of the samples are female patients.

FIGURE : 5

CYLINDRICAL DIAGRAM SHOWING THE DISTRIBUTION OF SAMPLE PERCENTAGE ACCORDING TO EDUCATIONAL STATUS

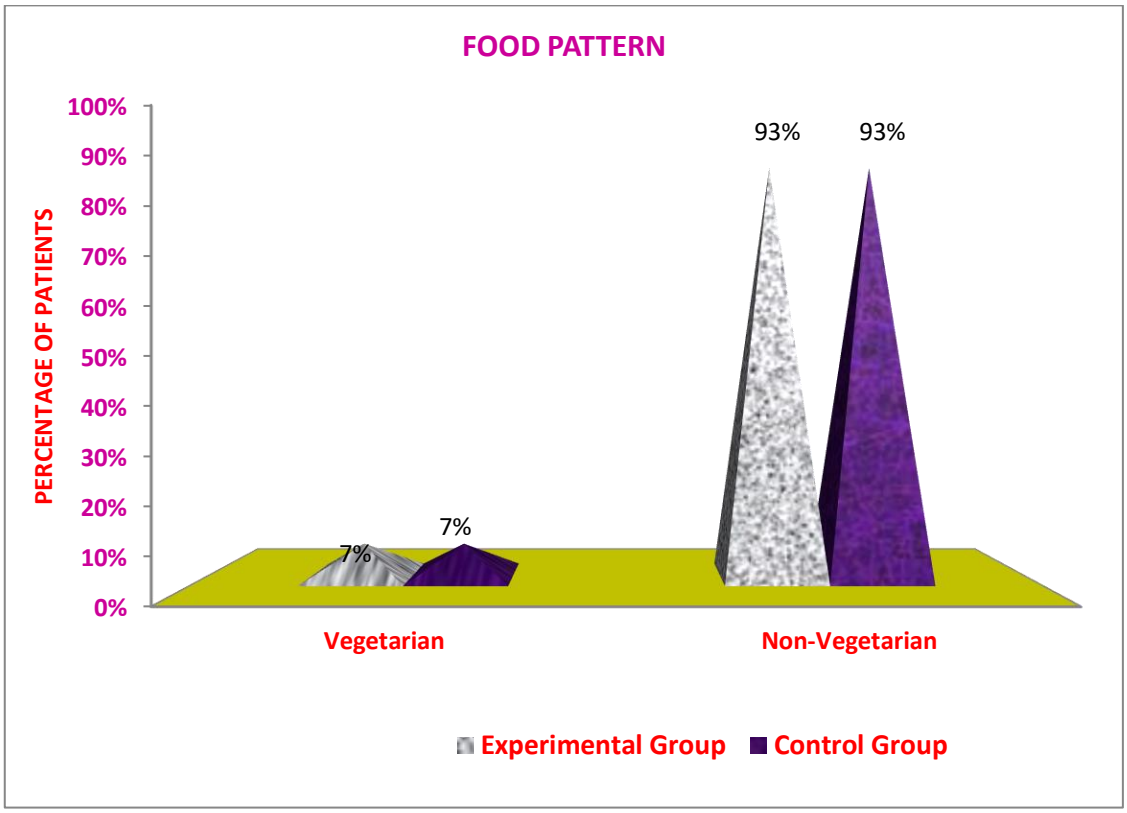


It is observed that, according to the educational status of patients in experimental group, 13(43%) of the samples are illiterate, 11(37%) of the samples had primary education, 3(10%) of the samples had secondary education and 3(10%) of the samples are graduates.

Similarly, in control group 16(53%) of the samples are illiterate, 8(27%) of the samples had primary education, 4(13%) of the samples had secondary education and 2(7%) of the samples are graduates.

FIGURE : 6

PYRAMIDAL DIAGRAM SHOWING THE DISTRIBUTION OF SAMPLE PERCENTAGE ACCORDING TO FOOD PATTERN

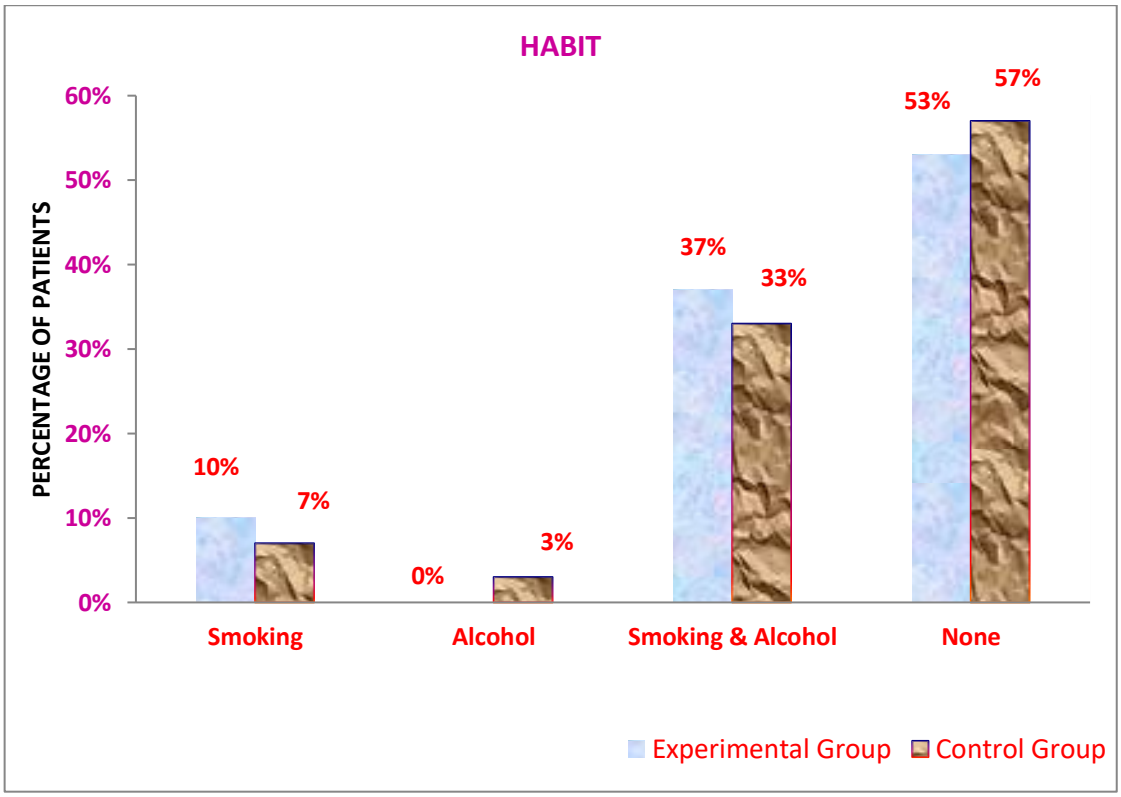


The data presented in the above diagram is according to the dietary habits of patients, in experimental group 28(93%) of the samples are non-vegetarian and 2(7%) of the samples are vegetarian.

Similarly, in control group 28(93%) of the samples are non-vegetarian an and 2(7%) of the samples are vegetarian.

FIGURE: 7

BAR DIAGRAM SHOWING THE DISTRIBUTION OF SAMPLE PERCENTAGE ACCORDING TO HABIT

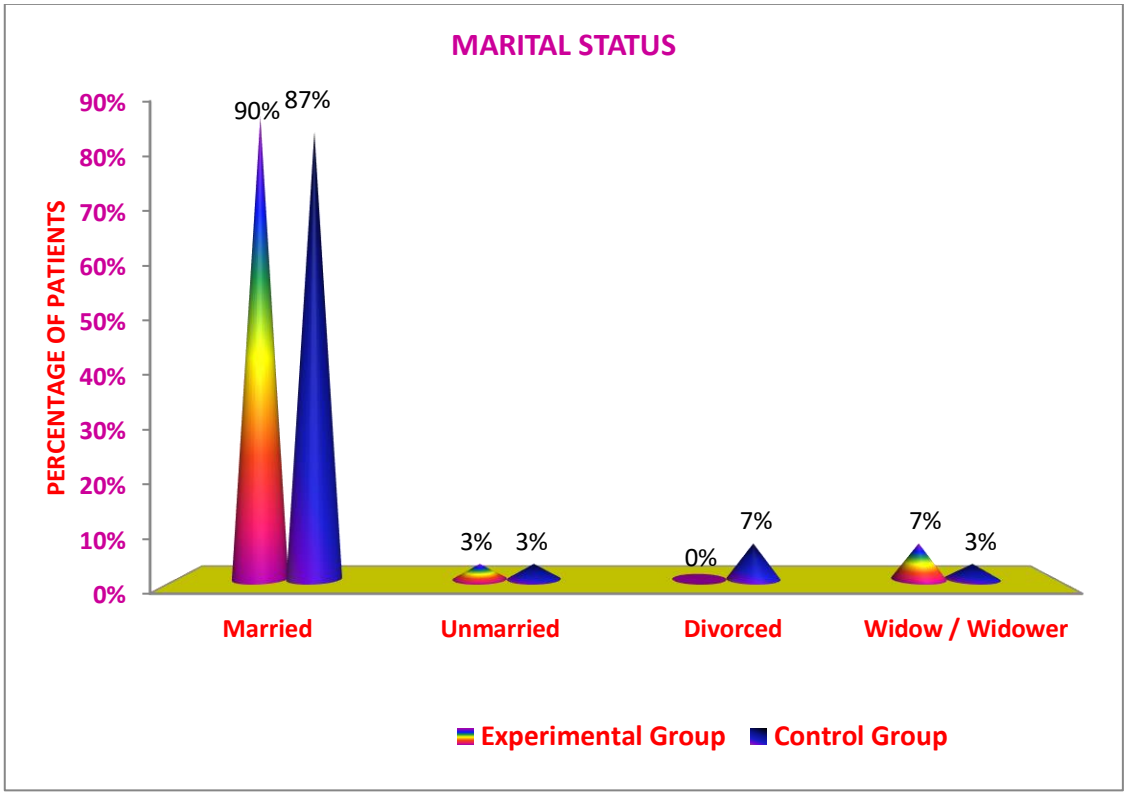


The data presented in the above diagram is according to the habit of patients, in experimental group 16(53%) of the samples have no habits, 11(37%) of the samples have the habit of smoking & alcohol, 3(10%) of the samples have the habit of smoking and none of the samples have habit of alcohol.

Similarly, in control group 17 (57%) of the samples have no habits, 10 (33%) of the samples have the habit of smoking and alcohol, 2(7%) of the samples have the habit of smoking and 1(3%) of the samples have the habit of alcohol.

FIGURE:8

CONICAL DIAGRAM SHOWING THE DISTRIBUTION OF SAMPLE PERCENTAGE ACCORDING TO MARITAL STATUS

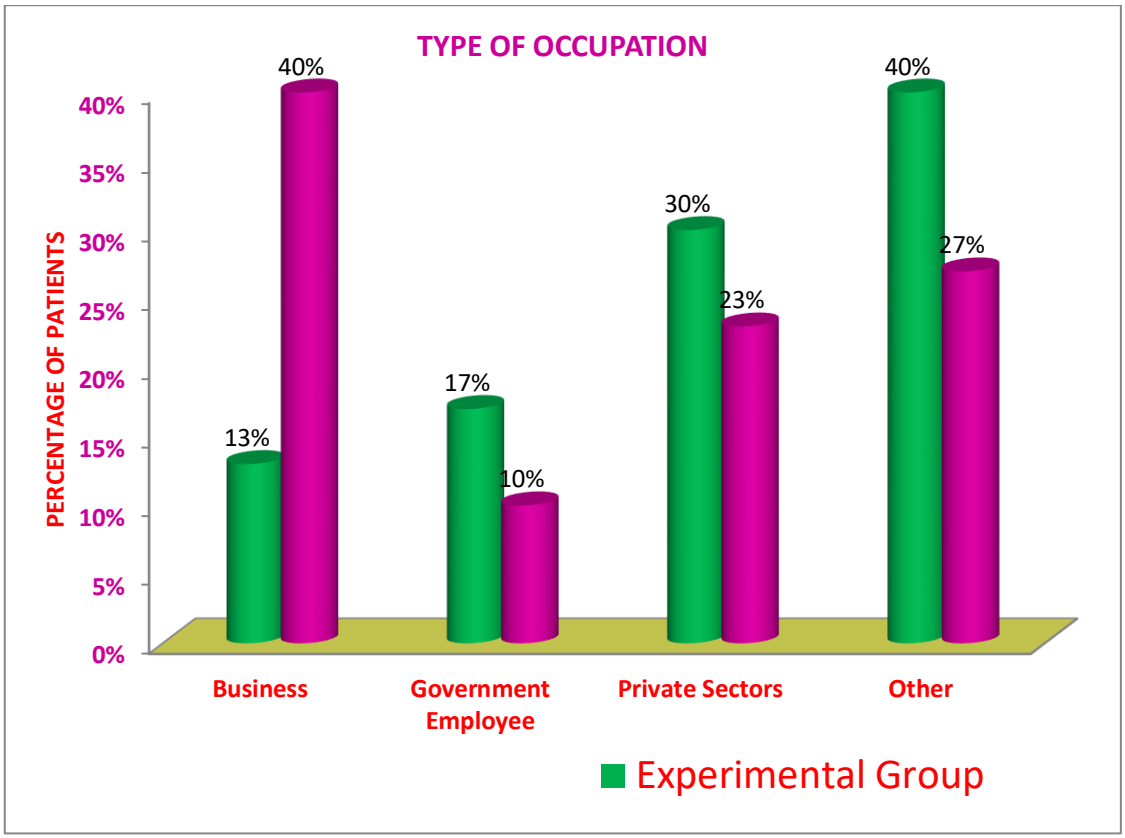


The above diagram represents marital status of patients in experimental group 27 (90%) of the samples are married, 2(7%) of the samples are widow / widower, 1(3%) of samples are unmarried and none of the samples are divorced.

Similarly, in control group 26(87%) of the samples are married 1(3%) of the samples are widow / widower, 1(3%) of the samples are unmarried and 2(7%) of the samples are divorced.

FIGURE: 9

CYLINDRICAL DIAGRAM SHOWING THE DISTRIBUTION OF SAMPLE PERCENTAGE AGE ACCORDING TO TYPE OF OCCUPATION

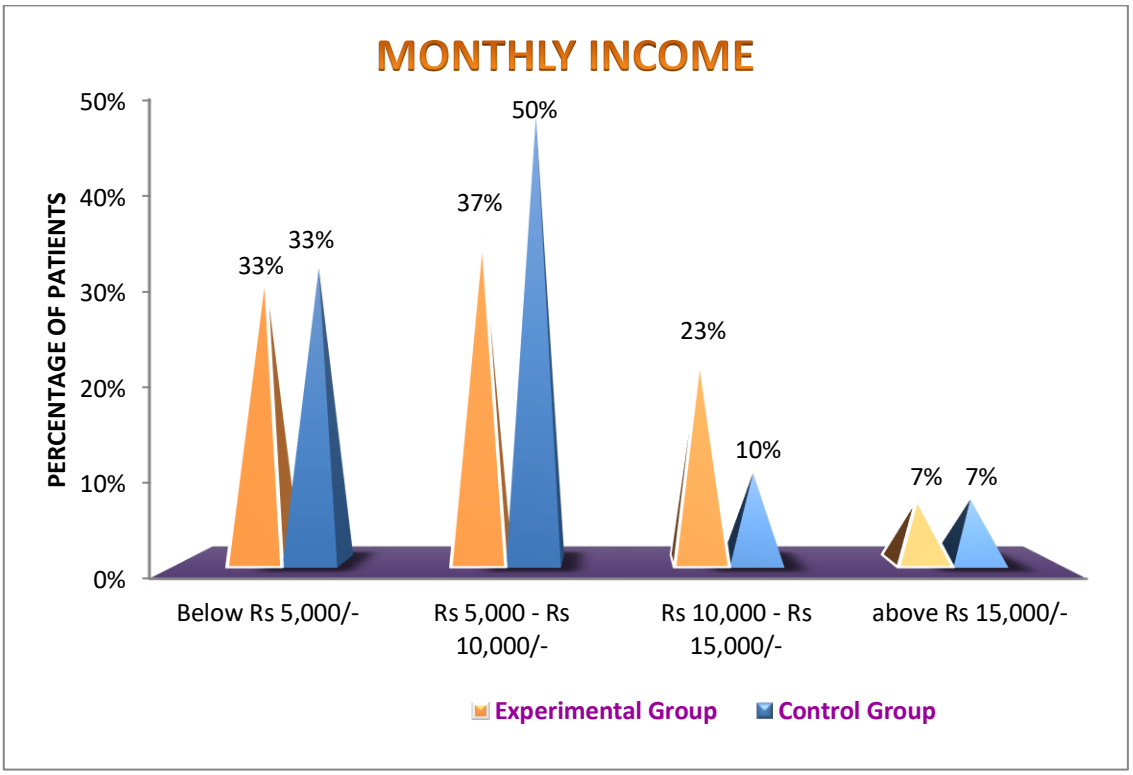


The above diagram represents type of occupation of patients, in experimental group 12(40%) of the samples are coming under others occupation, 9(30%) of the samples are working in the private sectors, 5(17%) of the samples are working as government employee and 4(13%) of the samples are doing business.

Similarly, in control group 8(27%) of the samples are coming under others occupation, 7(23%) of the samples are working in private sector, 3(10%) of the samples are working as government employee and 12(40%) of the samples are doing business.

FIGURE:10

PYRAMIDAL DIAGRAM SHOWING THE DISTRIBUTION OF SAMPLE PERCENTAGE ACCORDING TO MONTHLY INCOME

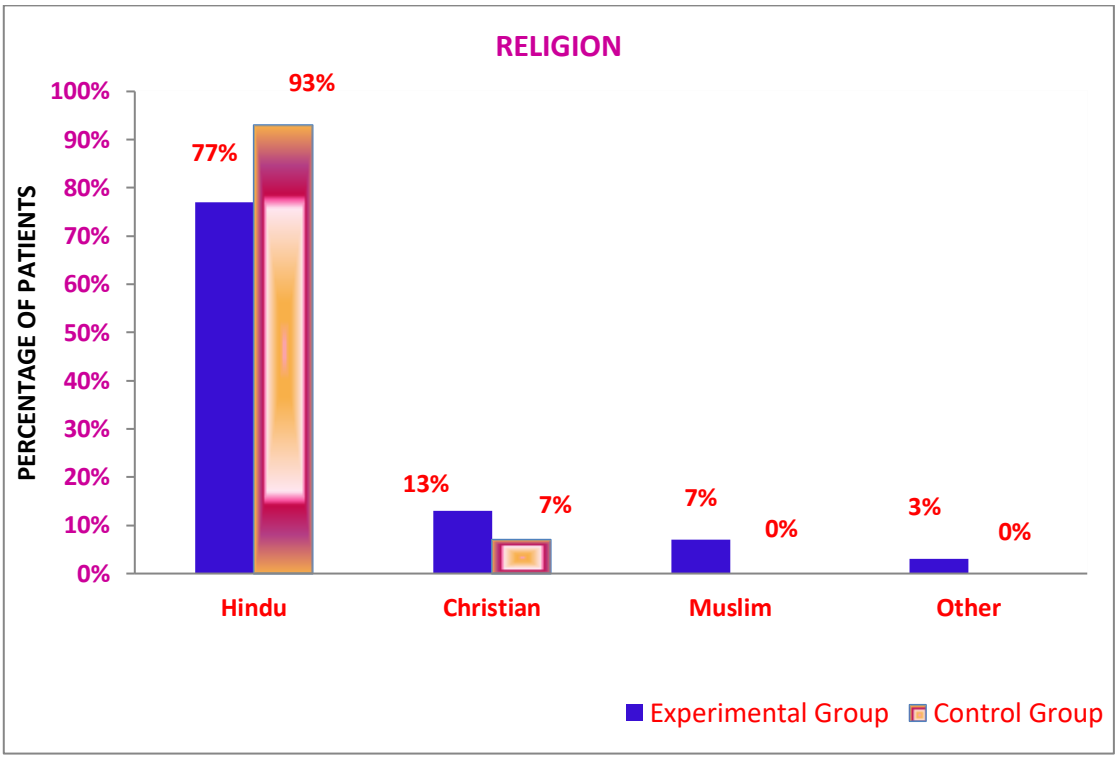


It is observed that according to the monthly income of patients, in experimental group 11(37%) of the samples are in the monthly income of Rs 5,001-Rs 10,000, 10(33%) of the samples are in the monthly income of below Rs 5,000, 7(23%) of the samples are in the monthly income of Rs 10,000-Rs 15,000 and 2(7%) of the samples are in the monthly income of above Rs 15,000.

Similarly in control group 15 (50%) of the samples are in the monthly income of Rs 5,001-Rs 10,000, 10(33%) of samples are in the monthly income of below Rs 5,000, 3(10%) of the samples are in the monthly income of Rs 10,000-Rs 15,000 and 2(7%) of the samples are in the monthly income of above Rs 15,000.

FIGURE:11

BAR DIAGRAM SHOWING THE DISTRIBUTION OF SAMPLE PERCENTAGE ACCORDING TO RELIGION

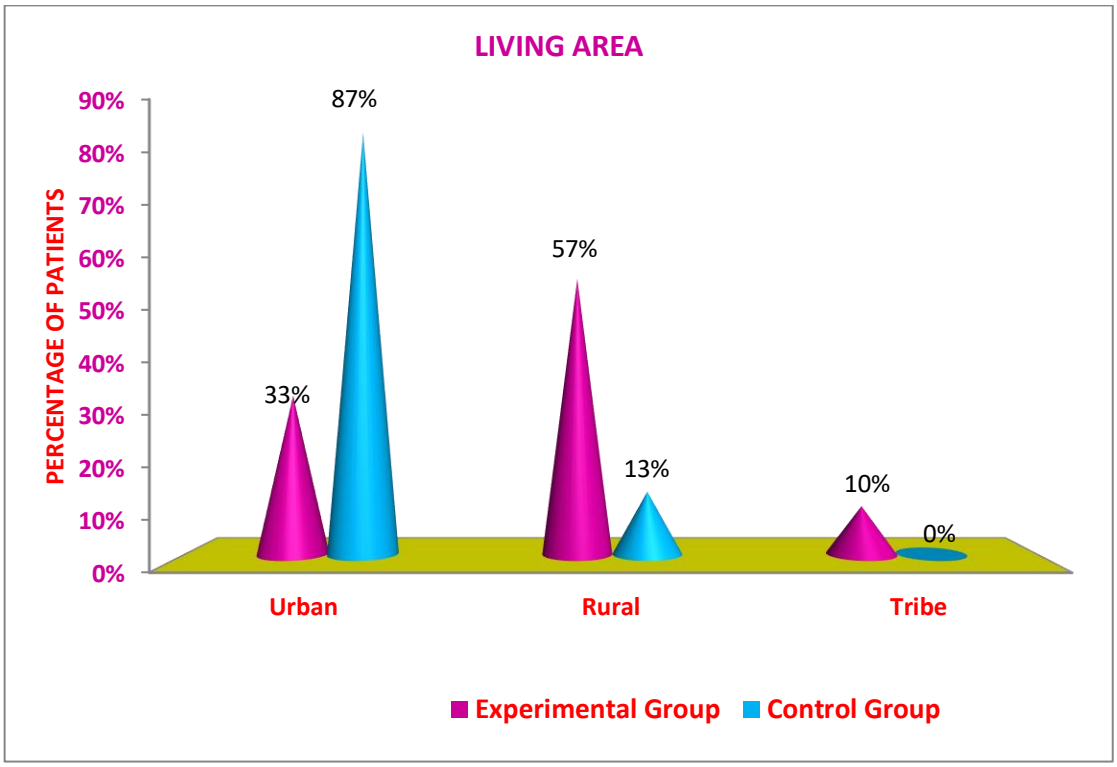


The data presented in the above diagram is according to the religion of patients, in experimental group 23 (77%) of the samples are Hindus, 4(13%) of the samples are Christians, 2(7%) of the samples are Muslim and 1(3%) of the samples are others.

Similarly, in control group 28 (93%) of the samples are Hindus, 2(7%) of the samples are Christians, 0(0%) of the samples in Muslim and other religion.

FIGURE:12

CONICAL DIAGRAM SHOWING THE DISTRIBUTION OF SAMPLE PERCENTAGE ACCORDING TO LIVING AREA



The data presented in the above diagram is according to the living area of patients, in experimental group 17(57%) of the samples are living in rural area, and 10 (33%) of the samples are living in urban area and 3(10%) of the samples are living in tribal area.

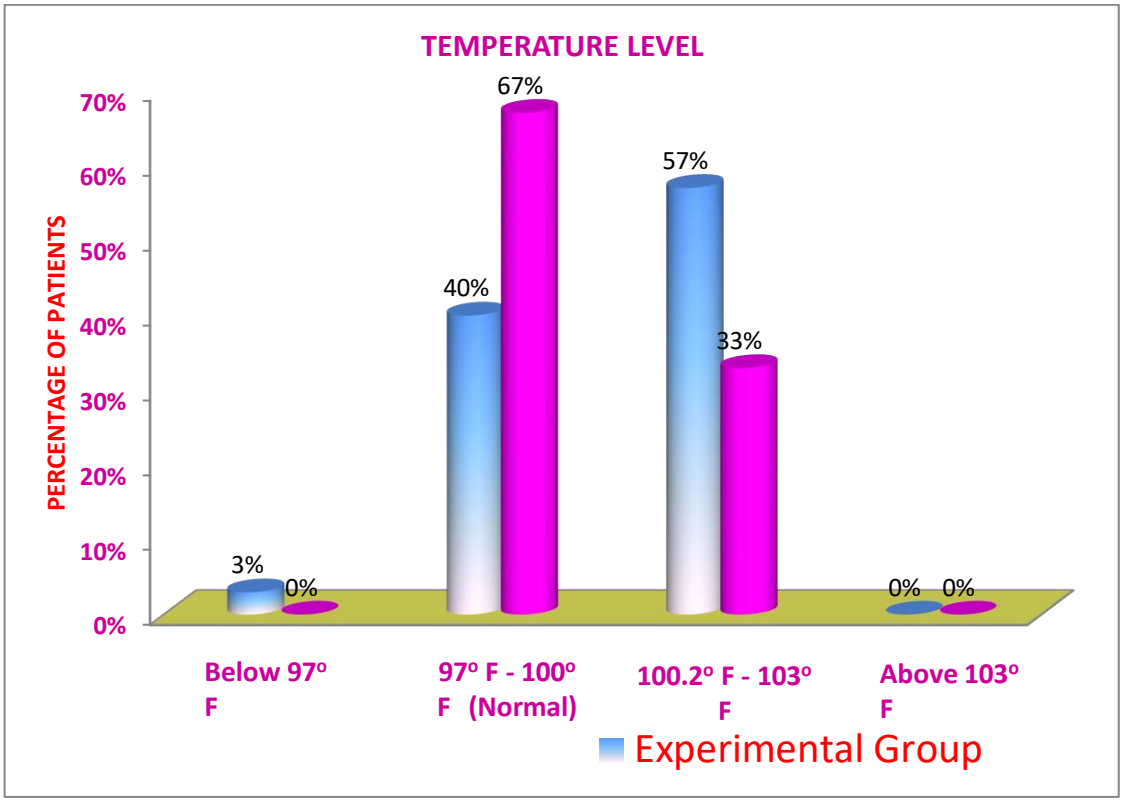
Similarly, in control group 4(13%) of the samples are living in rural area, 26 (87%) of the samples are living in urban area and none of the samples are in tribal area.

TABLE -2 FREQUENCY AND PERCENTAGE DISTRIBUTION OF SAMPLE ON SELECTED CLINICAL VARIABLES

S. No	Clinical variables	Experimental group (n=30)		Control group (n=30)	
		Frequency	Percentage	Frequency	Percentage
1.	Temperature level of the patient				
	a) Below 97º F	1	3%	0	0%
	b) 97º F – 100ºF (Normal)	12	40%	20	67%
	c) 100.2ºF – 103ºF	17	57%	10	33%
	d) Above 103ºF	0	0%	0	0%
2.	Pulse rate of the patient (beats / min)				
	a) 40-60	0	0%	0	0%
	b) 61-100 (Normal)	3	10%	19	63%
	c) 101-120	23	77%	11	37%
	d) Above 120	4	13%	0	0%
3.	Respiratory rate of the patient (breaths / min)				
	a) 12-20 (Normal)	6	20%	13	43%
	b) 21-30	17	57%	17	57%
	c) 31-40	7	23%	0	0%
	d) Above 40	0	0%	0	0%
4.	Oxygen saturation				
	a) Below 70%	0	0%	0	0%
	b) 70-80%	0	0%	0	0%
	c) 81-95%	21	70%	7	23%
	d) 96-100% (Normal)	9	30%	23	77%
5.	Blood pressure of the patient				
	a) 90/60 – 110/70 mm Hg	0	0%	0	0%
	b) 120/80 mm Hg (Normal)	7	23%	16	53%
	c) Above 120/80 mm Hg	23	77%	14	47%

FIGURE:13

CYLINDRICAL DIAGRAM SHOWING THE DISTRIBUTION OF SAMPLE PERCENTAGE ACCORDING TO TEMPERATURE LEVEL

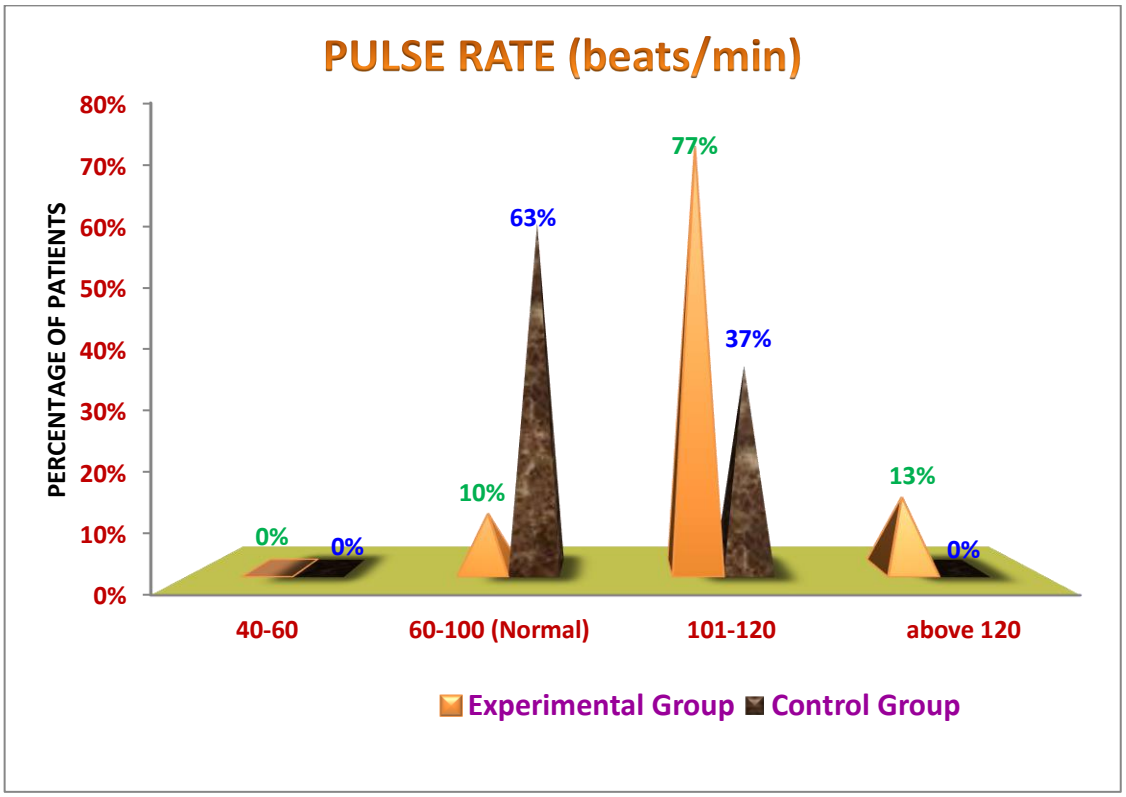


The data presented in the above diagram is according to the temperature level of the patients, in experimental group 17(57%) of the samples had 100.2°F to 103°F, 12(40%) of the samples had 97°F-100°F (Normal), 1(3%) of the samples had below 97°F and none of the samples had above 103°F.

Similarly, in control group 10(33%) of the samples had 100.2°F-103°F, 20(67%) of the samples had 97°F-100°F (Normal), and none of the samples had below 97°F and above 103°F

FIGURE: 14

PYRAMIDAL DIAGRAM SHOWING THE DISTRIBUTION OF SAMPLE PERCENTAGE ACCORDING TO PULSE RATE

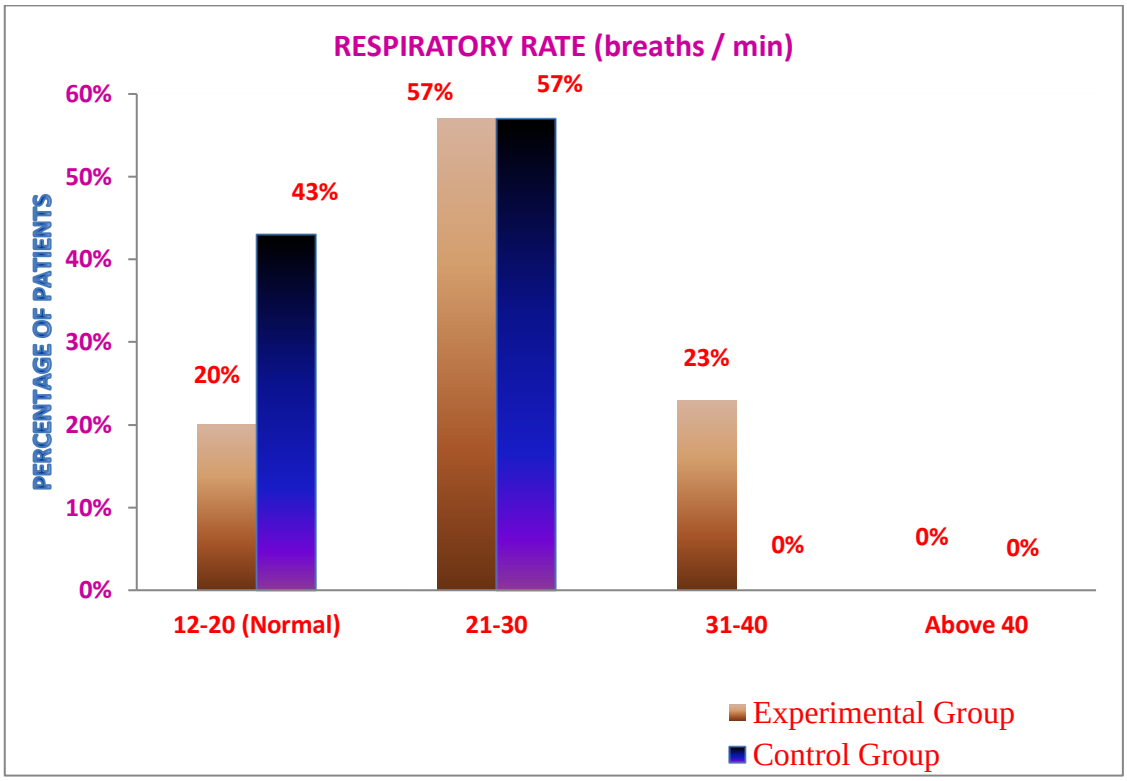


The data presented in the above diagram is according to the pulse rate of the patients, in experimental group 23(77%) of the samples had 101-120 beats / min and 4(13%) of the samples had above 120 beats / min, 3(10%) of the samples had 61-100 beats /min and no samples had 40-60 beats /min.

Similarly, in control group 11(37%) of the samples had 101-120 beats / min and none of the samples had above 120 beats / min, 19 (63%) of the samples had 61-100 beats / min and none of the samples and 40-60 beats / min.

FIGURE:15

BAR DIAGRAM SHOWING THE DISTRIBUTION OF SAMPLE PERCENTAGE ACCORDING TO RESPIRATORY RATE

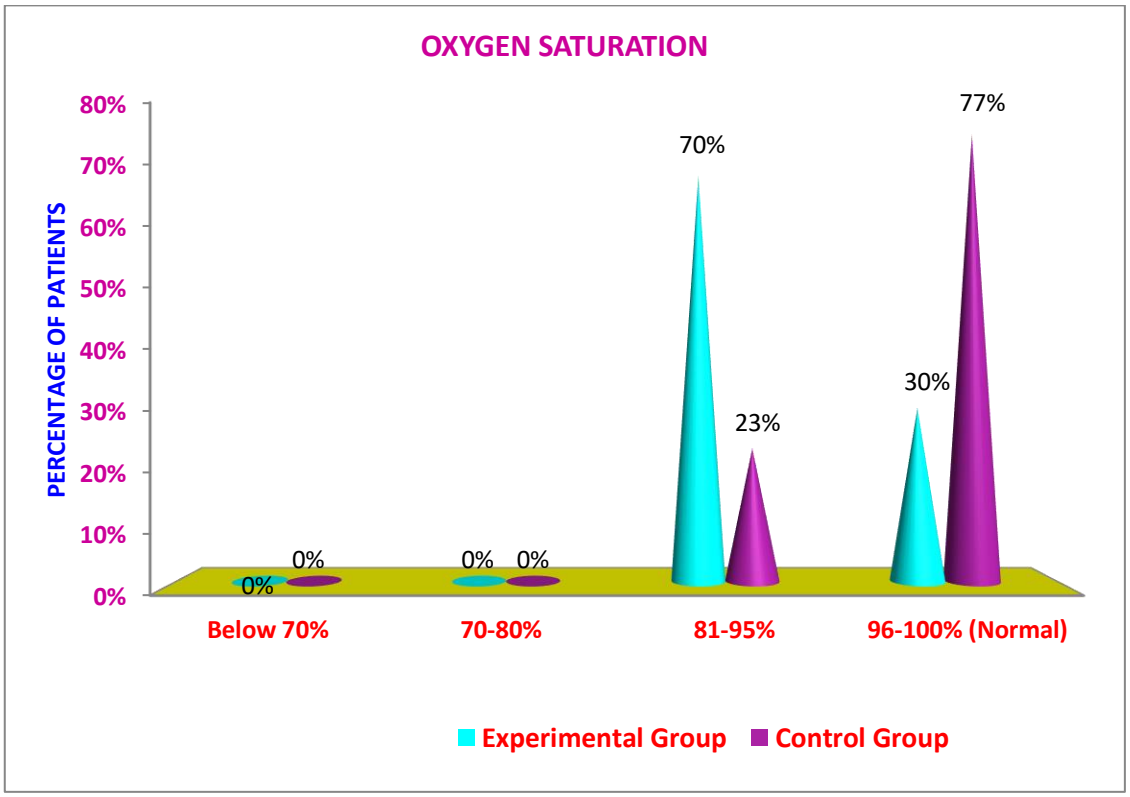


The date presented in the above diagram is according to the respiratory rate of the patients, in experimental group 17(57%) of the samples had 21-30 breaths / min, 7(23%) of the samples had 31-40 breaths /min, 6(20%) of the samples had 12-20 breaths / min, and none of the samples had above 40 breaths / min.

Similarly, in control group 17(57%) of the samples had 21-30 breaths / min, none of the samples had 31-40 breaths / min and 13(43%) of the samples had 12-20 breaths / min and none of the samples had above 40 breaths / min.

FIGURE:16

CONICAL DIAGRAM SHOWING THE DISTRIBUTION OF SAMPLE PERCENTAGE ACCORDING TO OXYGEN SATURATION

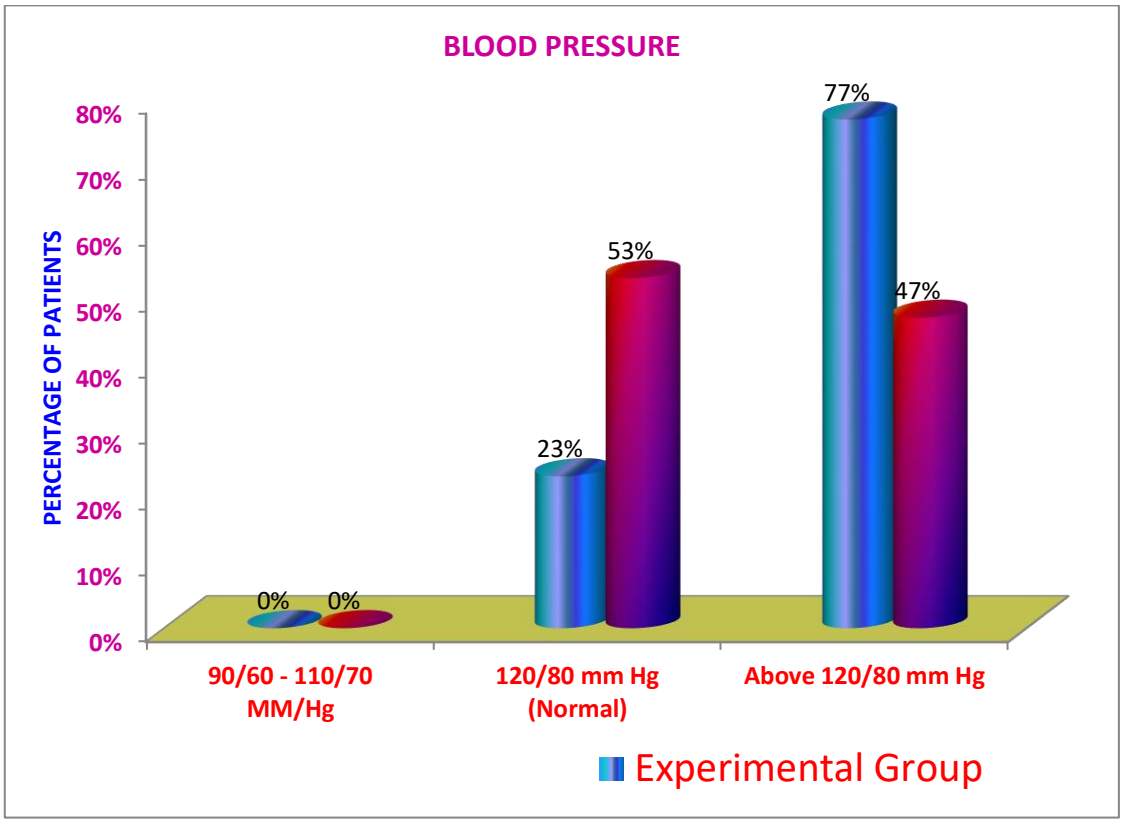


The data presented in the above diagram is according to the oxygen saturation of the patients, in experimental group 21(70%) of the samples had 81-95%, 9(30%) of the samples had 96-100% and none of the samples had below 70% & 70% - 80%.

Similarly, in control group oxygen saturation of the patient 7(23%) of the samples had 81-95%, 23(77%) of the samples had 96-100% and none of the samples had below 70% & 70% -80%.

FIGURE:17

CYLINDRICAL DIAGRAM SHOWING THE DISTRIBUTION OF SAMPLE PERCENTAGE ACCORDING TO BLOOD PRESSURE



The data presented in the above diagram is according to the blood pressure of the patients, in experimental group 23(77%) of the samples had above 120/80mm Hg, 7(23%) of the samples had 120/80 mm Hg and none of the samples had 90/60 – 110-70 mm Hg.

Similarly, in control group 14(47%) of the samples had above 120/80 mm Hg, 16(53%) of the samples had 120/80 MM Hg and none of the samples had 90/60-110-70 mm Hg.

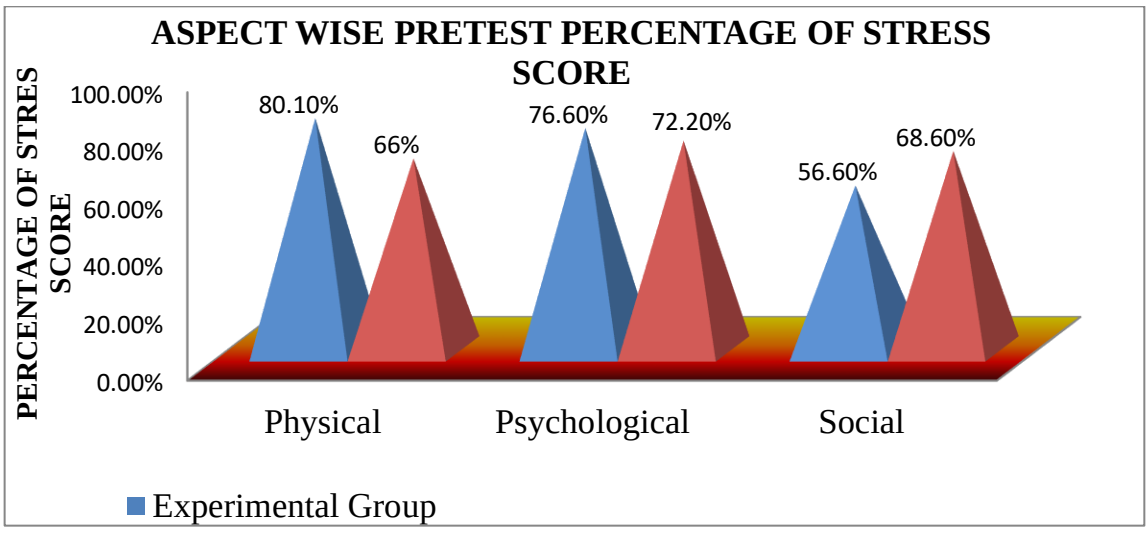
SECTION -II

ASSESS THE LEVEL OF STRESS AMONG CAD PATIENTS IN EXPERIMENTAL AND CONTROL GROUP

TABLE – 3 ASPECT WISE PRETEST PERCENTAGE OF STRESS SCORE AMONG CAD PATIENTS IN EXPERIMENTAL AND CONTROL GROUP

S.No	Aspect	No of Questions	Min-max Score	Stress Score			
				Experimental group		Control group	
				Mean Score	Mean %	Mean Score	Mean %
1.	Physical	10	0-30	24.0	80.1%	19.8	66%
2.	Psychological	10	0-30	23.0	76.6%	21.6	72.22%
3.	Social	10	0-30	17.0	56.6%	20.6	68.6%

FIGURE: 18 PYRAMIDAL DIAGRAMS DEPICTING ASPECT WISE PRETEST PERCENTAGE OF STRESS SCORE



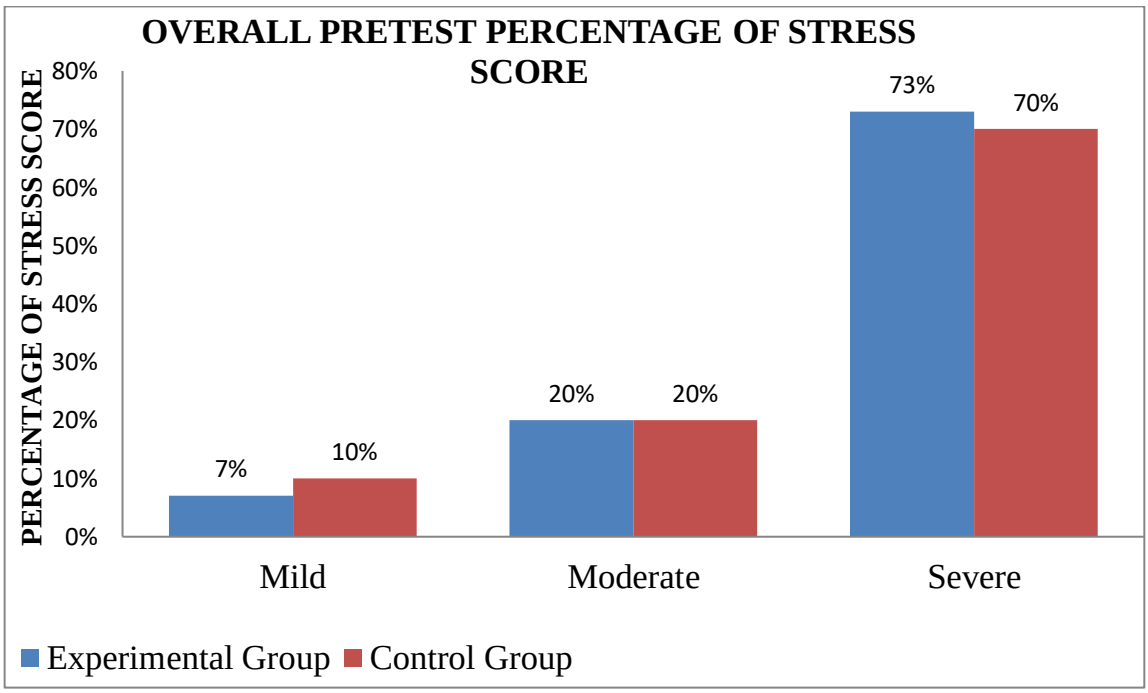
The pretest stress score of the patients in experimental group related to physical is 80.1 %, psychological is 76.6%, and where as social is 56.6%.

Similarly, in control group related to physical 66 %, psychological 72.20%, and social 68.6%.

TABLE – 4 OVERALL PRETEST PERCENTAGE OF STRESS SCORE AMONG CAD PATIENTS IN EXPERIMENTAL AND CONTROL GROUP

S.No	Level of Stress	Experimental group		Control group	
		No of sample	Percentage	No of sample	Percentage
1.	Mild	2	7%	3	10%
2.	Moderate	6	20%	6	20%
3.	Severe	22	73%	21	70%

FIGURE: 19 BAR DIAGRAM DEPICTING OVERALL PRETEST PERCENTAGE OF STRESS SCORE



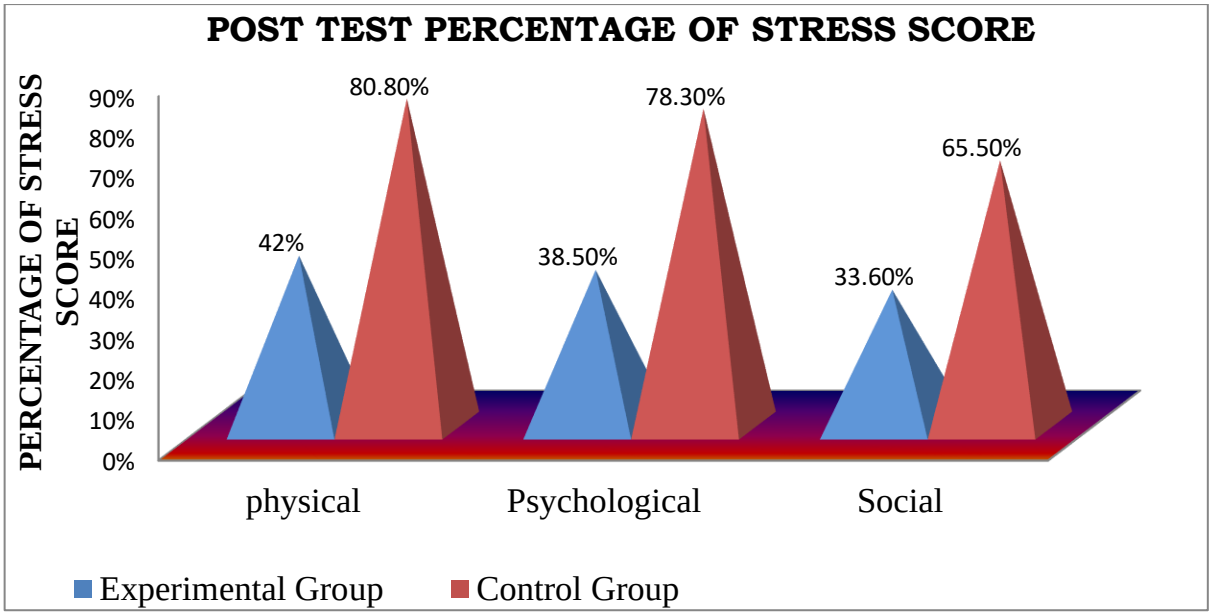
In experimental group, 7% of CAD patients had mild stress, 20% of CAD patients had moderate stress and 73% of patient had severe stress.

Similarly, in control group 10% of CAD patients had mild stress, 20% of CAD patients had moderate stress and 70% of patient had severe stress.

TABLE – 5 ASPECT WISE POST TEST PERCENTAGE OF STRESS SCORE AMONG CAD PATIENTS IN EXPERIMENTAL AND CONTROL GROUP

S. No	Aspect	No of Questions	Min-max Score	Stress Score			
				Experimental group		Control group	
				Mean score	Mean %	Mean score	Mean %
1.	Physical	10	0-30	12.6	42%	24.2	80.8%
2.	Psychological	10	0-30	11.5	38.8%	23.5	78.3%
3.	Social	10	0-30	10.1	33.6%	19.6	65.5%

FIGURE : 20 PYRAMIDAL DIAGRAM DEPICTING ASPECT WISE POST TEST PERCENTAGE OF STRESS SCORE



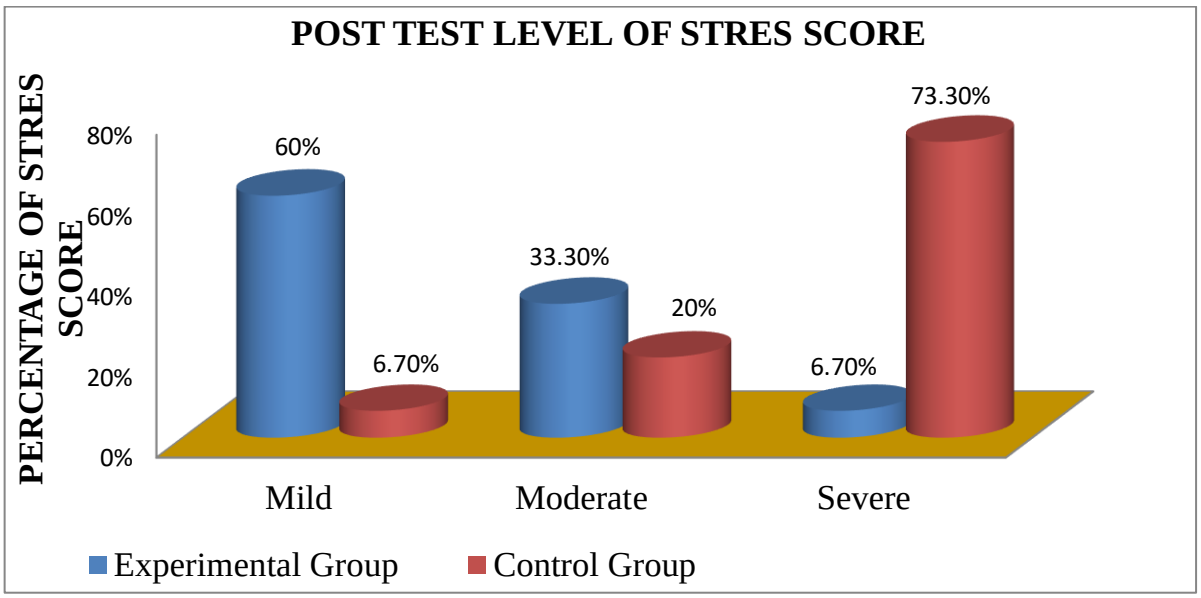
The post test stress score of the CAD patients in experimental group related to physical aspect 42 %, psychological aspect 38.5%, and social aspect 33.6%.

Similarly, in control group related to physical aspect 80.8 %, psychological aspect 78.3%, and social aspect 65.5%.

TABLE - 6 OVERALL POST TEST PERCENTAGE OF STRESS SCORE AMONG CAD PATIENTS IN EXPERIMENTAL AND CONTROL GROUP

S.No	Level of Stress	Experimental group		Control group	
		No of Sample	Percentage	No of Sample	Percentage
1.	Mild	18	60%	2	6.7%
2.	Moderate	10	33.3%	6	20%
3.	Severe	2	6.7%	22	73.3%

FIGURE : 21 CYLINDRICAL DIAGRAM DEPICTING OVERALL POST TEST PERCENTAGE OF STRESS SCORE



The post test level of stress score in experimental group, 60% of CAD patients had mild stress, 33.3% of CAD patients had moderate stress and 6.7% of patient had severe stress.

Similarly, in control group 6.7% of CAD patients had mild stress, 20% of CAD patients had moderate stress and 73.3% of patient had severe stress. 24.2

SECTION – III

EVALUATE THE EFFECTIVENESS OF PROGESSIVE MUSCLE RELAXATION THERAPY ON STRESS AMONG CAD PATIENTS IN EXPERIMENTAL GROUP.

TABLE : 7 ASPECT WISE COMPARISONS OF MEAN SCORE BETWEEN PRE -TEST AND POST TEST LEVEL OF STRESS AMONG CAD PATIENTS IN EXPERIMENTAL GROUP

S. No	Components	Observation	Mean Score	Mean difference	SD	't' Value	Significance
1.	Physical	Pre test	24.0	11.4	6.583	9.971	P< 0.05 Highly Significant
		Post test	12.6				
2.	Psychological	Pre test	23.0	11.5	5.723	10.954	P< 0.05 Highly Significant
		Post test	11.5				
3.	Social	Pre test	17.0	6.9	5.878	9.305	P< 0.05 Highly Significant
		Post test	10.1				

The above table depicts that the computed't' value on physical aspect't' = 9.971, psychological aspect 't' = 10.954, and social aspect't'= 9.305. These are all higher H_1 (there is significant difference between pretest and post test level of stress among CAD patients with experimental group) was accepted.

FIGURE: 22

CONICAL DIAGRAM DEPICTING ASPECT WISE COMPARISON OF MEAN SCORE BETWEEN PRE TEST AND POST TEST LEVEL OF STRESS AMONG CAD PATIENTS IN EXPERIMENTAL GROUP

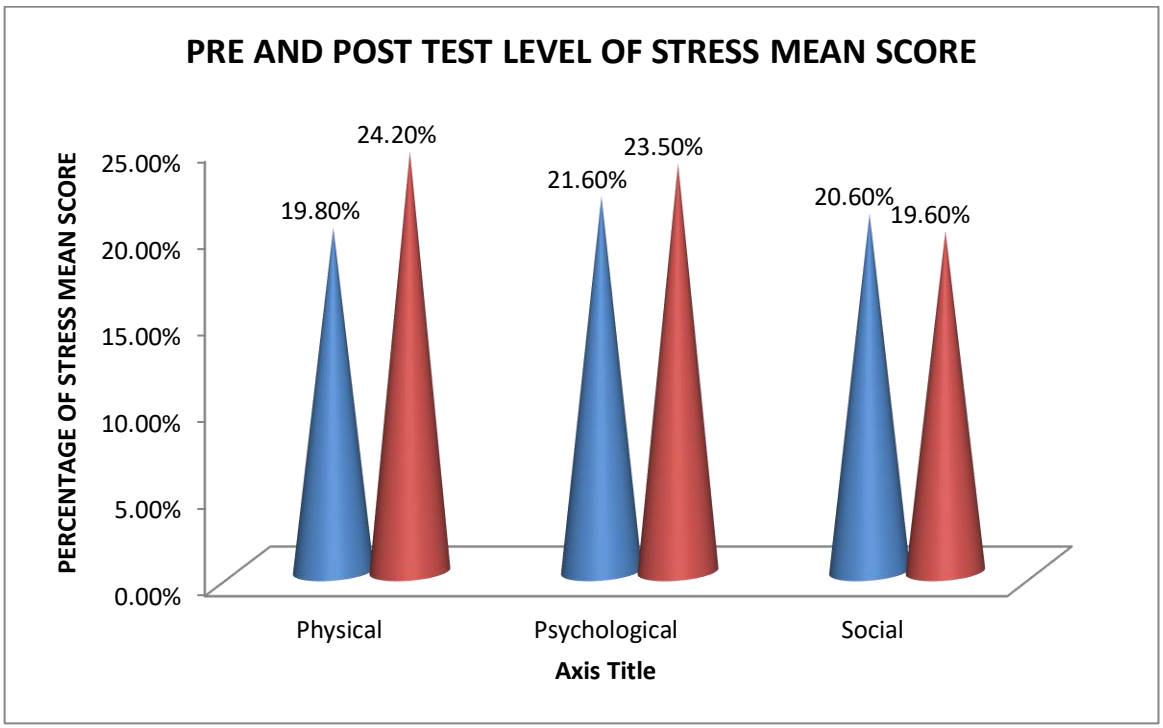
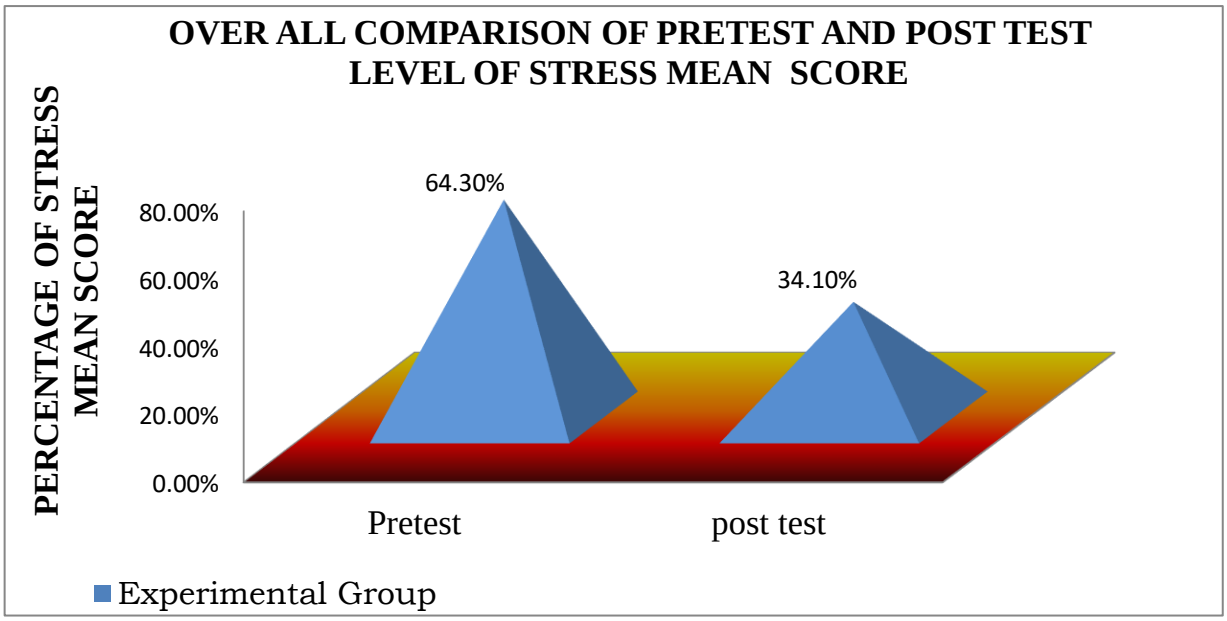


TABLE – 8 OVERALL COMPARISON OF MEAN SCORE BETWEEN PRE TEST AND POST TEST LEVEL OF STRESS AMONG CAD PATIENTS IN EXPERIMENTAL GROUP

S. No	Components	Observation	Mean Score	Mean difference	SD	't' Value	Significance
1.	Stress Score total	Pre test	64.3	30.2	14.454	11.353	P< 0.05 Highly Significant
		Post test	34.1				

FIGURE: 23 PYRAMIDAL DIAGRAM DEPICTING OVERALL COMPARISON OF MEAN SCORE BETWEEN PRE TEST AND POST TEST LEVEL OF STRESS SCORE



The overall comparison of pretest and post test level of stress mean score in experimental group, pretest 64.3%, and post test 34.1%. There is a significant reduction stress score after progressive muscle relaxation therapy.

SECTION – III

EVALUATE THE EFFECTIVENESS OF PROGESSIVE MUSCLE RELAXATION THERAPY ON STRESS AMONG CAD PATIENTS IN CONTROL GROUP.

TABLE : 9 ASPECT WISE COMPARISONS OF MEAN SCORE BETWEEN PRE -TEST AND POST TEST LEVEL OF STRESS AMONG CAD PATIENTS IN CONTROL GROUP

S. No	Components	Observation	Mean Score	Mean difference	SD	't' Value	Significance
1.	Physical	Pre test	19.8	4.4	5.583	9.971	P< 0.05 Significant
		Post test	24.2				
2.	Psychological	Pre test	21.6	1.9	4.723	8.954	P< 0.05 Significant
		Post test	23.5				
3.	Social	Pre test	20.6	1.0	4.478	7.305	P< 0.05 Significant
		Post test	19.6				

The above table depicts that the computed't' value on physical aspect't' = 9.971, psychological aspect 't' = 8.954, and social aspect't'= 7.305. These are all higher (there is significant difference between pretest and post test level of stress among CAD patients in control group.

FIGURE : 24

CONICAL DIAGRAM DEPICTING ASPECT WISE COMPARISON OF MEAN SCORE BETWEEN PRE TEST AND POST TEST LEVEL OF STRESS AMONG CAD PATIENTS IN CONTROL GROUP

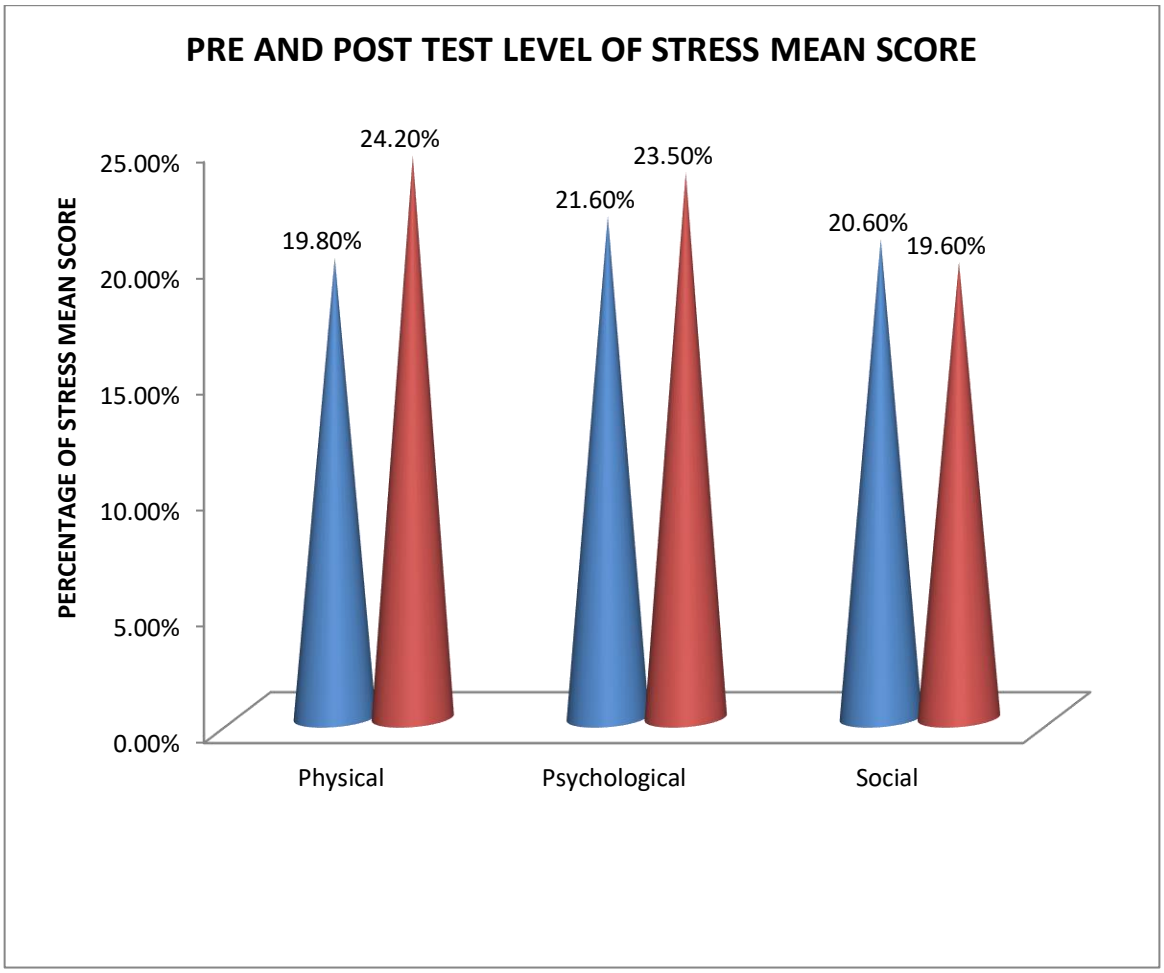
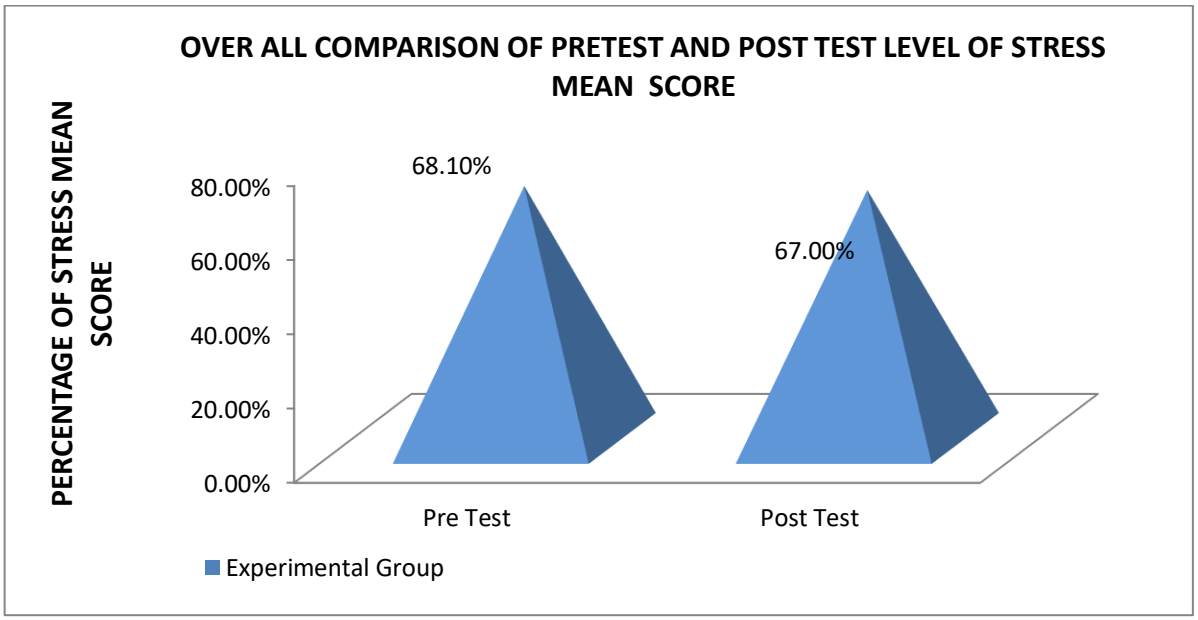


TABLE – 10 OVERALL COMPARISON OF MEAN SCORE BETWEEN PRE TEST AND POST TEST LEVEL OF STRESS AMONG CAD PATIENTS IN CONTROL GROUP

S. No	Components	Observation	Mean Score	Mean difference	SD	't' Value	Significance
1.	Stress Score total	Pre test	68.1	1.1	0.250	0.784	P>0.05 Not Significant
		Post test	67.0				

FIGURE : 25 PYRAMIDAL DIAGRAM DEPICTING OVERALL COMPARISON OF MEAN SCORE BETWEEN PRE TEST AND POST TEST LEVEL OF STRESS SCORE



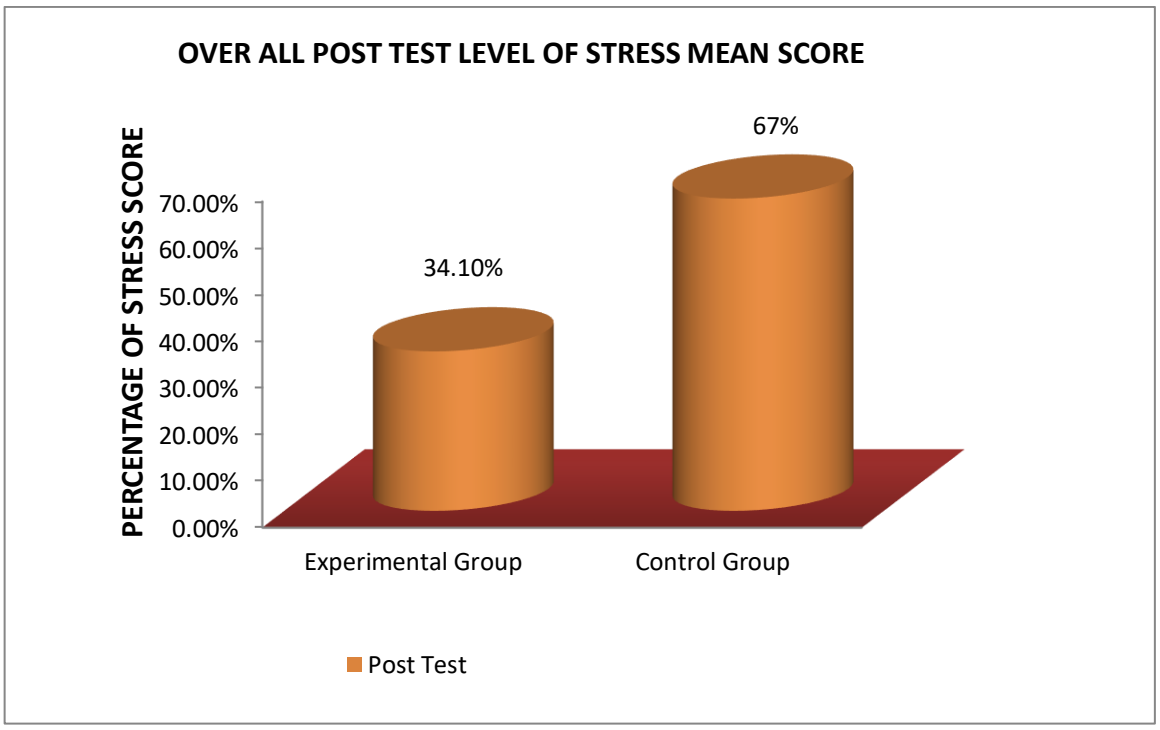
The overall comparison of pretest and post test level of stress mean score in control group, pretest 68.1%, and post test 67.0%. There is a significant reduction stress score after progressive muscle relaxation therapy.

SECTION – IV

TABLE : 11 OVERALL MEAN SCORE BETWEEN POST TEST LEVEL OF STRESS AMONG CAD PATIENTS IN EXPERIMENTAL AND CONTROL GROUP

S. No	Components	Observation	Mean Score	Mean difference	SD	't' Value	Significance
1.	Stress Score total	Experimental group	34.1	32.9	13.0	9.833	P< 0.05 Highly Significant
		Control group	67.0				

FIGURE : 26 CYLINDRICAL DIAGRAM DEPICTING OVERALL MEAN SCORE BETWEEN POST TEST LEVEL OF STRESS



There is a significant difference between posttest level of stress between experimental and control group.

SECTION – V

FINDOUT THE ASSOCIATION BETWEEN LEVEL OF STRESS AMONG PATIENTS WITH CAD WITH THEIR SELECTED DEMOGRAPHIC VARIABLES AND CLINICAL VARIABLES.

TABLE – 12 ASSOCIATION BETWEEN PRETEST LEVEL OF STRESS AMONG PATIENTS WITH CAD WITH THEIR SELECTED DEMOGRAPHIC VARIABLES IN EXPERIMENTAL GROUP.

S. No	Demographic variables	Level of stress						Significance (chi-square)
		Mild		Moderate		Severe		
		F	%	F	%	F	%	
1.	**Age (in years)**							
	a) 30-40	1	3.33	1	3.33	2	6.67	$\chi^2 = 3.693$ p> 0.05 Not Significant
	b) 41-50	1	3.33	4	13.33	6	20.00	
	c) 51-60	0	0.00	2	6.67	7	23.33	
	d) Above 60	0	0.00	2	6.67	4	13.33	
2.	**Sex**							
	a) Male	1	3.33	4	13.33	13	41.94	$\chi^2 = 1.549$ P > 0.05 Not significant
	b) Female	1	3.33	5	16.67	6	20.00	
3.	**Education status**							
	a) Illiterate	0	0.00	4	13.33	9	30.00	$\chi^2 = 13.059$ P < 0.05 **Significant**
	b) Primary education	0	0.00	3	10.00	8	26.67	
	c) Secondary education	1	3.33	2	6.67	0	0.00	
	d) Graduate	1	3.33	0	0.00	2	6.67	
4.	**Food pattern**							
	a) Vegetarian	0	0.00	0	0.00	2	6.67	$\chi^2 = 1.15$ P > 0.05 Not significant
	b) Non-vegetarian	2	6.67	9	30.00	17	56.67	
5.	**Habit**							
	a) Smoking	1	3.33	0	0.00	2	6.67	$\chi^2 = 6.641$ P > 0.05 Not significant
	b) Alcohol	0	0.00	0	0.00	0	0.00	
	c) Smoking & Alcohol	0	0.00	2	6.67	9	30.00	
	d) None	1	3.33	7	23.33	8	26.67	
6.	**Marital status**							
	a) Married	1	3.33	8	26.67	18	60.00	$\chi^2 = 10.656$ P > 0.05 Not significant
	b) Unmarried	0	0.00	0	0.00	1	3.33	
	c) Divorced	0	0.00	0	0.00	0	0.00	
	d) Widow / widower	1	3.33	1	3.33	0	0.00	

S. No	Demographic Variables	Level of stress						Significance (chi-square)
		Mild		Moderate		Severe		
		F	%	F	%	F	%	
7.	**Type of occupation**							
	a) Business	1	3.33	1	3.33	2	6.67	$\chi^2 = 4.285$ p> 0.05 Not Significant
	b) Government employee	0	0.00	1	3.33	4	13.33	
	c) Private sectors	1	3.33	2	6.67	6	20.00	
	d) Other	0	0.00	5	16.67	7	6.67	
8.	**Monthly income**							
	a) Below Rs 5,000/-	0	0.00	4	13.33	6	20.00	χ^2 =5.291 P > 0.05 Not significant
	b) Rs 5,000 – Rs 10,000/-	2	6.67	3	10.00	6	20.00	
	c) Rs 10,001 – Rs 15,000/-	0	0.00	2	6.67	5	16.67	
	d) Above Rs 15,001/-	0	0.00	0	0.00	2	6.67	
9.	**Religion**							
	a) Hindu	2	6.67	6	20.00	15	50.00	$\chi^2 = 2.327$ P > 0.05 Not significant
	b) Christian	0	0.00	2	6.67	2	6.67	
	c) Muslim	0	0.00	1	3.33	1	3.33	
	d) Other	0	0.00	0	0.00	1	3.33	
10.	**Living Area**							
	a) Urban	0	0.00	1	3.33	15	50.00	**χ^2 = 16.834 P< 0.05 Significant**
	b) Rural	2	6.67	7	23.33	2	6.67	
	c) Tribe	0	0.00	1	3.33	2	6.67	

TABLE – 13

ASSOCIATION BETWEEN PRETEST LEVEL OF STRESS AMONG PATIENTS WITH CAD WITH THEIR SELECTED CLINICAL VARIABLES IN EXPERIMENTAL GROUP

S. No	Clinical variables	Level of stress						Significance (chi-square)
		Mild		Moderate		Severe		
		F	%	F	%	F	%	
1.	**Temperature level of the patient**							
	a) Below 97º F	0	0.00	0	0.00	1	3.33	$\chi^2 = 5.135$ p> 0.05 Not Significant
	b) 97º F – 100ºF (Normal)	0	0.00	6	20.00	6	20.00	
	c) 100.2ºF – 103ºF	2	6.67	3	10.00	12	40.00	
	d) Above 103ºF	0	0.00	0	0.00	0	0.00	
2.	**Pulse rate of the patient (beats / min)**							
	a) 40-60	0	0.00	0	0.00	0	0.00	$\chi^2 = 22.749$ P < 0.05 **Significant**
	b) 61-100 (Normal)	0	0.00	8	26.67	1	3.33	
	c) 101-120	1	3.33	1	3.33	15	50.00	
	d) Above 120	1	3.33	0	0.00	3	10.00	
3.	**Respiratory rate of the patient (breaths / min)**							
	a) 12-20	1	3.33	2	6.67	3	10.00	$\chi^2 = 1.688$ P > 0.05 Not significant
	b) 21-30	1	3.33	5	16.67	11	36.67	
	c) 31-40	0	0.00	2	6.67	5	16.67	
	d) Above 40	0	0.00	0	0.00	0	0.00	
4.	**Oxygen saturation**							
	a) Below 70%	0	0.00	0	0.00	0	0.00	$\chi^2 = 0.659$ P > 0.05 Not significant
	b) 70-80%	0	0.00	0	0.00	0	0.00	
	c) 81-95%	1	3.33	7	23.33	13	43.33	
	d) 96-100% (Normal)	1	3.33	2	6.67	6	20.00	
5.	**Blood pressure of the patient**							
	a) 90/60 – 110/70 mm Hg	0	0.00	0	0.00	0	0.00	$\chi^2 = 20.086$ P < 0.05 **Significant**
	b) 120/80 mm Hg (Normal)	2	6.67	9	30.0	3	10.00	
	c) Above 120/80 mm Hg	0	0.00	0	0.00	10	53.33	

TABLE – 14

ASSOCIATION BETWEEN PRETEST LEVEL OF STRESS AMONG PATIENTS WITH CAD WITH THEIR SELECTED DEMOGRAPHIC VARIABLES IN CONTROL GROUP.

S. No	Demographic variables	Level of stress						Significance (chi-square)
		Mild		Moderate		Severe		
		F	%	F	%	F	%	
1.	**Age (in years)**							
	a) 30-40	2	6.67	2	6.67	0	0.00	$\chi^2 = 10.395$ p> 0.05 Not Significant
	b) 41-50	0	0.00	7	23.33	5	16.67	
	c) 51-60	0	0.00	5	16.67	3	10.00	
	d) Above 60	1	3.33	3	10.00	2	6.67	
2.	**Sex**							
	a) Male	1	3.33	12	40.00	3	10.00	$\chi^2 = 4.781$ P > 0.05 Not significant
	b) Female	2	6.67	5	16.67	7	23.33	
3.	**Education status**							
	a) Illiterate	1	3.33	9	30.00	6	20.00	$\chi^2 = 7.718$ P > 0.05 Not significant
	b) Primary education	0	0.00	6	20.00	2	6.67	
	c) Secondary education	1	3.33	1	3.33	2	6.67	
	d) Graduate	1	3.33	1	3.33	0	0.00	
4.	**Food pattern**							
	a) Vegetarian	0	0.00	1	3.33	1	3.33	$\chi^2 = 0.361$ P > 0.05 Not significant
	b) Non-vegetarian	3	10.00	16	53.33	9	30.00	
5.	**Habit**							
	a) Smoking	0	0.00	1	3.33	1	3.33	$\chi^2 = 9.764$ P > 0.05 Not significant
	b) Alcohol	1	3.33	0	0.00	0	0.00	
	c) Smoking & Alcohol	0	0.00	7	23.33	3	10.00	
	d) None	2	6.67	9	30.00	6	20.00	
6.	**Marital status**							
	a) Married	3	10.00	15	50.00	8	26.67	$\chi^2 = 3.459$ P > 0.05 Not significant
	b) Unmarried	0	0.00	1	3.33	0	0.00	
	c) Divorced	0	0.00	1	3.33	1	3.33	
	d) Widow / widower	0	0.00	0	0.00	1	3.33	

S. No	Demographic Variables	Level of stress						Significance (chi-square)
		Mild		Moderate		Severe		
		F	%	F	%	F	%	
7.	**Type of occupation**							
	a) Business	1	3.33	6	20.00	5	16.67	$\chi^2 = 7.817$ p> 0.05 Not Significant
	b) Government employee	0	0.00	1	3.33	2	6.67	
	c) Private sectors	2	6.67	5	16.67	0	0.00	
	d) Other	0	0.00	5	16.67	3	10.00	
8.	**Monthly income**							
	a) Below Rs 5,000/-	1	3.33	4	13.33	5	16.67	$\chi^2 = 8.48$ P > 0.05 Not significant
	b) Rs 5,000 – Rs 10,000/-	1	3.33	11	36.67	3	10.00	
	c) Rs 10,001 – Rs 15,000/-	0	0.00	1	3.33	2	6.67	
	d) Above Rs 15,001/-	1	3.33	1	3.33	0	0.00	
9.	**Religion**							
	a) Hindu	3	10.00	15	50.00	10	33.33	$\chi^2 = 1.752$ P > 0.05 Not significant
	b) Christian	0	0.00	2	6.67	0	0.00	
	c) Muslim	0	0.00	0	0.00	0	0.00	
	d) Other	0	0.00	0	0.00	0	0.00	
10.	**Living Area**							
	a) Urban	0	0.00	2	6.67	8	26.67	**$\chi^2 = 15.101$ P< 0.05 Significant**
	b) Rural	3	10.00	15	50.00	2	6.67	
	c) Tribe	0	0.00	0	0.00	0	0.00	

TABLE – 15

ASSOCIATION BETWEEN PRETEST LEVEL OF STRESS AMONG PATIENTS WITH CAD WITH THEIR SELECTED CLINICAL VARIABLES IN CONTROL GROUP

S. No	Clinical Variables	Level of stress						Significance (chi-square)
		Mild		Moderate		Severe		
		F	%	F	%	F	%	
1.	**Temperature level of the patient**							
	a) Below 97° F	0	0.00	0	0.00	0	0.00	$\chi^2 = 9.614$ p> 0.05 Not Significant
	b) 97° F – 100°F (Normal)	3	10.00	14	46.67	3	10.00	
	c) 100.2°F – 103°F	0	0.00	3	10.00	7	23.33	
	d) Above 103°F	0	0.00	0	0.00	0	0.00	
2.	**Pulse rate of the patient (beats / min)**							
	a) 40-60	0	0.00	0	0.00	0	0.00	$\chi^2 = 23.3$ P < 0.05 **Significant**
	b) 61-100 (Normal)	2	6.67	16	53.33	0	0.00	
	c) 101-120	1	3.33	1	3.33	10	33.33	
	d) Above 120	0	0.00	0	0.00	0	0.00	
3.	**Respiratory rate of the patient (breaths / min)**							
	a) 12-20	2	6.67	9	30.00	2	6.67	$\chi^2 = 3.433$ P > 0.05 Not significant
	b) 21-30	1	3.33	8	26.67	8	26.67	
	c) 31-40	0	0.00	0	0.00	0	0.00	
	d) Above 40	0	0.00	0	0.00	0	0.00	
4.	**Oxygen saturation**							
	a) Below 70%	0	0.00	0	0.00	0	0.00	$\chi^2 = 2.87$ P > 0.05 Not significant
	b) 70-80%	0	0.00	0	0.00	0	0.00	
	c) 81-95%	0	0.00	3	10.00	4	13.33	
	d) 96-100% (Normal)	3	10.00	14	46.67	6	20.00	
5.	**Blood pressure of the patient**							
	a) 90/60 – 110/70 mm Hg	0	0.00	0	0.00	0	0.00	$\chi^2 = 20.023$ P < 0.05 **Significant**
	b) 120/80 mm Hg (Normal)	3	10.00	16	53.33	1	3.33	
	c) Above 120/80 mm Hg	0	0.00	1	3.33	9	30.00	

CHAPTER – V

DISCUSSION

This chapter discusses the major findings of the research study and reviews that in relation to the finding from the result of the present study, for this study the data was obtained regarding the level of stress among patients with coronary artery disease in Raghav hospital, Appakudal, Erode District.

STATEMENT OF THE PROBLEM

A STUDY TO EVALUATE THE EFFECTIVENESS OF PROGRESSIVE MUSCLE RELAXATION THERAPY ON STRESS AMONG PATIENTS WITH CORONARY ARTERY DISEASE IN RAGHAAV HOSPITAL, APPAKUDAL, ERODE DISTRICT.

OBJECTIVES OF THE STUDY

1) **TO ASSESS THE LEVEL OF STRESS AMONG PATIENTS WITH CORONARY ARTERY DISEASE OF EXPERIMENTAL AND CONREOL GROUP IN RAGHAV HOSPITAL, APPAKUDAL, ERODE DISTRICT.**
   - The pretest mean stress score of the CAD patients in experimental group related to physical 24.0(80.1%), psychological 23.0(76.6%) and social 17.0(56.6%), similarly in control group related to physical 19.8(66%), psychological 21.6 (72.22%), and social 20.6 (68.6%).
   - The pretest overall stress score in experimental group was mild 2(7%), moderate 6(20%), and severe 22(73%), similarly in control group mild 3 (10%), moderate 6(20%) and severe 21 (70%).

- The post test mean stress score of the CAD patients in experimental group related to physical 12.6(42%), psychological 11.5(38.5%) and social 10.1(33.6%), similarly in control group related to physical 24.2(80.8%), psychological 23.5 (78.3%) and social 19.6 (65.5%).
- The post test overall stress score in experimental group was mild 18 (60%), moderate 10 (33.3%), and severe 2 (6.6%), similarly in control group mild 2(6.6%), moderate 6(20%), and severe 22(73.3%).
- Thus, in the experimental group after the intervention, post test level of stress was reduced, but in the control group, there is no reduction in post test level of stress.

2) TO EVALUATE THE EFFECTIVENESS OF PROGRESSIVE MUSCLE RELAXATION THERAPY ON STRESS AMONG PATIENTS WITH CORONARY ARTERY DISEASE IN EXPERIMENTAL GROUP.

- The computed value on physical aspect t=9.971, psychological aspect t = 10.954 and social aspect t= 9.303these are all higher than the table value at 0.05 level of significance. Hence, H_1 (there is significant difference between pre test and post test level of stress among CAD patients of experimental group) was accepted.
- The total pre test mean score was 64.3 and post test mean score was 34.1 and mean difference was 30.2, standard deviation SD= 14.454, t = 11.353, $p<0.05$. It showed that there was a significant difference between pre test and post test mean score, hence, Progressive muscle relaxation therapy reduces stress among CAD patients.

3) TO COMPARE THE POST TEST LEVEL OF STRESS AMONG PATIENTS WITH CORONARY ARTERY DISEASE OF EXPERIMENTAL GROUP AND CONTROL GROUP

- The total post test stress mean score in experimental group was 34.1 and in control group was 67.0, mean difference 32.9, standard deviation SD = 13.0, t = 9.833, $p<0.05$. It's showed that there was significant difference in post test level of stress among CAD patients in experimental and control group. Hence, H_2 was accepted.

4) TO FINDOUT THE ASSOCIATION BETWEEN PRE TEST LEVEL OF STRESS AMONG PATIENTS WITH CORONARY ARTERY DISEASE WITH THEIR SELECTED DEMOGRAPHIC VARIABLES AND CLINICAL VARIABLES.

- The calculated x^2 value in experimental group shows significant association between pretest level of stress and selected demographic variables such as living area ($x^2 = 16.834$, $p<0.05$) clinical variables such as pulse rate ($x^2=22.749$, $p<0.05$), and blood pressure ($x^2=20.086$, $p<0.05$).
- Similarly, in control group, it shows significant association between the pretest level of stress and selected demographic variables such as living area ($x^2=15.101$, $p<0.05$) clinical variable such as pulse rate ($x^2=23.3$, $p<0.05$) and blood pressure ($x^2=22.023$, $p<0.05$).

CHAPTER VI

SUMMARY, CONCLUSION AND RECOMMENDATION

INTRODUCTION

The primary goal of the study was to assess the level of stress among patients with coronary artery disease in Raghav hospital, Appakudal, Erode district. Pretest was conducted with the help of structured questionnaire. After the pretest, experimental group underwent progressive muscle relaxation therapy on the same day and for 5 consecutive days. Then post test was conducted on the same group and was associated with demographic and clinical variables.

OBJECTIVES

- To assess the level of stress, among patients with coronary artery disease of experimental and control group in Raghav hospital, Appakuadal, Erode district.
- To evaluate the effectiveness of progressive muscles relaxation therapy on stress among patients with coronary artery disease in experimental group.
- To compare the post test level of stress among patients with coronary artery disease of experimental and control group.
- To find out the association between pretest level of stress among patients with coronary artery disease with their selected demographic variables and clinical variables.

REVIEW OF LITERATURE

The conceptual frame work adapted for this study is based on Roy's Adaption model. In this study review of literature is divided into following headings.

- Literature related to coronary artery disease
- Literature related to stress
- Literature related to progressive muscle relaxation therapy.

METHODOLOGY

The research design adapted for this study was quasi – experimental research design. The sample consists of 60 patients with coronary artery disease, in that 30 experimental group and 30 control group were selected for this study by convenient sampling technique.

The instrument used for data collection was organized into 3 sessions.

SECTION I

Demographic variables of patients with coronary artery disease in Raghav hospital, Appakudal, Erode district.

SECTION II

Clinical variables of the selected patients.

SECTION III

Rating scale regarding level of stress among patients with coronary artery disease in selected hospitals at Erode district.

The data collection was done and analyzed, interpreted on the basis of the objectives of the study. The collected data was summarized and tabulated by utilizing descriptive statics (percentage, mean, standard deviation) and inferential statistic (paired‘t’ test, unpaired‘t’ test, chi – square test).

RESULTS

The result of this study showed that the pretest level of stress mean score in experimental group (mild 2 (7%), moderate 9 (30%) and severe 19 (63%) was reduced in the post test mean score (mild 17 (57%), moderate 10 (33%) and severe 3 (10%). It states that progressive muscle relaxation therapy has an impact on stress among patients with coronary artery disease in experimental group.

The computed 't' value 14.125 was higher than the calculated value at 0.05 level of significance. Hence, H_1 (there is significant difference between pre test and post test level of stress among patients with coronary artery disease of experimental group) was accepted.

The post test overall stress score in experimental group mild 17 (57%), moderate 10(33%) and severe 3(10%) and in control group mild 2(7%), moderate 15(50%) and severe 13 (43%).

The comparison between post test level of stress score in experimental group and control group, showing the value are significant which was observed form unpaired 't' test value of 8.753 at 0.05 level of significance, which is evident for the effect of progressive muscle relaxation therapy in reducing level of stress among patient with coronary artery disease. Hence H_2 (there is significance difference in post test level of stress among patients with coronary artery disease of experimental group and control group) was accepted.

There is significant association between pretest level of stress and demographic variables such as living area and clinical variables such as pulse rate, blood pressure in experimental group and control group.

The findings of the study support the need of awareness regarding progressive muscle relaxation therapy among nurses. The study was proved that the patient with coronary artery disease had a remarkable decrease in stress level after progressive muscle relaxation therapy.

CONCLUSION

The finding of the study proved that the progressive muscle relaxation therapy on stress among patients with coronary artery disease, was effective in reducing the level of stress. The study revealed that irrespective of variations in demographic variables, all patients in experimental group showed reduction in level of stress with progressive muscle relaxation therapy.

NURSING IMPLICATIONS

The present study was conducted to findout the stress among patients with coronary artery disease following implications for nursing practice, education, administration and research.

NURSING ADMINISTRATION

Today there is an increasing need for quality and holistic care. Nursing administrators are in the key position to formulate policies and the execution of quality nursing based on research findings with necessary changes. Nurse administrators should take the initiate in organizing continuing educational programme on progressive muscle relaxation therapy for the health care personnel in the hospital and community settings with modern technological aids.

NURSING EDUCATION

Alternative and complementary therapies are increasing in popularity. Nurse educators need to lay emphasis on assessment of stress of coronary artery disease patients in the curriculum and orient students in imparting the progressive muscle relaxation therapy to patients with coronary artery disease during hospitalization. Ongoing education can be planned for graduate students.

NURSING PRACTICE

Nursing should be equipped with updated knowledge as in care of patients with coronary artery disease. An in service education to equip clinical nurses with current knowledge on alternative and complementary therapies like progressive muscle relaxation therapy for patient with coronary artery disease.

NURSING RESEARCH

A profession seeking to improve the practice of its members and to enhance its professional stature strives for the continuous development of a relevant body of knowledge. The findings of the research need to be disseminated through publication so that the utilization of such research findings is encouraged.

RECOMMENDATIONS

- A similarly study may be replicated using a larger sample for better generalization.
- A comparative study can be conducted with more than one intervention.
- A survey to assess the coping strategies of coronary artery disease patients can be undertaken.

- The effectiveness of progressive muscle relaxation therapy can be assessed upon the level of satisfaction.
- It can be conducted in different settings like hospice care and rehabilitation centers.

SUGGESTIONS

- Nurses can be given training programme on progressive muscle relaxation therapy and other therapies.
- Progressive muscle relaxation therapy should be emphasized in nursing curriculum.
- Complementary therapy cell could be arranged in the institution.
- Findings of the study can be utilized to educate family members and no – nursing personnel to provide quality services in hospital.

SUMMARY

The researcher has full satisfaction in conduction this study which focuses on the patients with coronary artery disease. The expert opinions, direction from the guide and help from the authorities made the study useful. This study shows that progressive muscles relaxation therapy is very effective in reducing the level of stress among patient with coronary artery disease.

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PROGRESSIVE MUSCLE RELAXATION THERAPY

Progressive muscle relaxation therapy involves tensing and relaxation of major muscle groups and aims to reduce feeling of tension to lower stress and to induce relaxation. It is a powerful tool first developed by Dr. Edmonol Jachsion in the 1920's. There are two steps in PMRT

Step 1:	Tension	:	The process of applying tension to a Muscle, focus your mind on the muscle Group.
Step 2:	Releasing the tension	:	After the 8 seconds just quickly and Suddenly let go, let all the tightness and pain flow out of the muscles, stay Relaxed for about 20-30 seconds.

To practice, the PMRT may start by sitting or lying down in a comfortable position, free destructions and breath steadily as you progress on the following order.

Face	Lift your eyebrows to wrinkle your forehead and then slowly relax and let the tension out of your forehead. Close your eyes tightly and then relax and slowly open them. Tense your lips, cheeks and jaw muscles.
Shoulders and arms	Bring your shoulders toward ears, tensing your muscles and then slowly relax. Starting with your upper arms, flex your biceps and then relax, letting the tension out of your muscles. Tens your fore arms and then slowly let them relax.

Chest and abdomen	Take a deep breath and tense the muscle within your chest and abdomen and then slowly exhale as you relax these muscles.
Hips and buttocks	Tighten the muscles in your hips and buttocks and then slowly release the tension and feel the stress leaving this area of your body.
Legs and feet	Flex your leg muscles, squeezing your legs together and then slowly relax, flex your feet for a few seconds and then relax them, curl your toes and slowly let them return to neutral

After finishing, relax with eyes closed for a few seconds and get up slowly.

ANNEXURE VI

QUESTIONNAIRE

TOOL – 1

INSTRUCTION:

Read each questions property and put (tick) on the column which one is suitable for you.

DEMOGRAPHIC DATA

1. Age [in year]
    a) 30-40 [ ]
    b) 41-50 [ ]
    c) 51-60 [ ]
    d) Above 60 [ ]
2. Sex
    a) Male [ ]
    b) Female [ ]
3. Educational status
    a) Illiterate [ ]
    b) Primary education [ ]
    c) Secondary education [ ]
    d) Graduate [ ]
4. Food pattern
    a) Vegetarian [ ]
    b) Non-vegetarian [ ]
5. Habit
    a) Smoking [ ]
    b) Alcohol [ ]
    c) Smoking and alcohol [ ]
    d) None [ ]
6. Marital status
    a) Married [ ]
    b) Unmarried [ ]
    c) Divorce [ ]
    d) Widow [ ]

7. Type of occupation
    a) Business [ ]
    b) Government employee [ ]
    c) Private sector [ ]
    d) Others [ ]
8. Monthly income
    a) Below Rs 5000/- [ ]
    b) Rs 5001 – Rs 10,000 [ ]
    c) Rs 10,001 – Rs 15,000 [ ]
    d) Above Rs 15,001 [ ]
9. Religion
    a) Hindu [ ]
    b) Christian [ ]
    c) Muslim [ ]
    d) Other [ ]
10. Living area
    a) Urban [ ]
    b) Rural [ ]
    c) Tribe [ ]

TOOL – II

CLINICAL VARIABLES PROFORMA

1. Temperature level of the patient
    a) Below 97^{o}F [ ]
    b) 97^{o}F - 100^{O} F [ ]
    c) 100.2^{O}F (Normal) [ ]
    d) Above 103^{o}F [ ]
2. Pulse rate of the patient (beats / min)
    a) 40-60 [ ]
    b) 61-100 (Normal) [ ]
    c) 101-120 [ ]
    d) Above 120 [ ]
3. Respiratory rate of the patient (breaths / min)
    a) 12-20 (Normal) [ ]
    b) 21-30 [ ]
    c) 31-40 [ ]
    d) Above 40 [ ]
4. Oxygen saturation
    a) Below 70% [ ]
    b) 70 – 80% [ ]
    c) 81 – 95% [ ]
    d) 96 – 100% (Normal) [ ]
5. Blood pressure of the patient
    a) 90/60 – 110/70 mmHg [ ]
    b) 120/80 mmHg (normal) [ ]
    c) Above 120/80 mmHg [ ]

QUESTIONNAIRE TO ASSESS THE STRESS LEVEL

TOOL - 3

S.No	Content	Never (o)	Some Times (1)	Fairly often	Very Often (3)
RELATED TO PHYSICAL					
1.	I have a feeling of faintness				
2.	I am having the feelings of shakiness				
3.	I am experiencing dryness of my mouth frequently				
4.	I am having breathing difficulty				
5.	I have difficulty in swallowing				
6.	I am having the sense of heart rate increases in the absence of physical exertion				
7.	I feel discomfort				
8.	I have trouble in falling asleep				
9.	I feel muscle tension especially in my neck, back and jaw				
10.	I am experiencing tension headache				
RELATED TO PSYCHOLOGICAL					
11.	I am getting upset by quite trivial things				
12.	I am experiencing negative thoughts				
13.	I feel upset				
14.	I am in a state of nervous tension				
15.	I feel sad and depressed				
16.	I feel anxious				

17.	I am worrying about my health condition				
18.	I am getting agitated				
19.	I feel lack of perfectionism				
20.	I am not able to relax my mind				
RELATED TO SOCIAL					
21.	I am feeling that I had nothing to look forward to				
22.	I feel down hearted				
23.	I feel myself getting less joy from my work				
24.	I feel less social than usual				
25.	I feel lonely				
26.	I feel I am worthless				
27.	I am not able to become enthusiastic about anything				
28.	I have a lack of self confidence				
29.	I feel terrified				
30.	I am unable to tolerate interruptions				

SCORE

Mild : 0 -30

Moderate : 31- 60

Severe : above 60

INTRODUCTIONS

Here, I would like to inform you that, I am researching about the effect of progressive muscle relaxation therapy on stress among patients with coronary artery disease and I would like to have you as my study participant with your concern and I inform you that this has no adverse effect on your health.

Your kind co-operation is highly esteemed and your honest responses are valuable. If you are willing to participate in the study. Please sign the consent form given below.

Thanking you for agreeing to participate in the study. Kindly fill the Performa given below.

Yours sincerely,

Place :

Date :

CONSENT FORM

I understand whatever you explained and I accepting you to have me as your study participant with my full co-operation.

I am declaring this with my full conscious and my clear knowledge on above.

Patient's signature

Place :

Date :

Gs;sp tpguk; Ma;T

gFjp - I

fPNo nfhLf;fg;gl;l tpguq;fis $He;J gbj;J rhpahd ,lj;jpy; (√)

,f;Fwpia ,lTk;.

1. **taJ (tUlj;jpy;)**

   m) 30 - 40 [ ]

   M) 41 - 50 [ ]

   ,) 51 - 60 [ ]

   <) 60f;F Nky; [ ]

2. **,dk;**

   m) Mz; [ ]

   M) ngz; [ ]

3. **fy;tpawpT**

   m) gbg;gwptpd;ik [ ]

   M) caHepiyf;fy;tp [ ]

   ,) Nky;epiyf;fy;tp [ ]

   <) gl;lg;gbg;G [ ]

4. **czTg; gof;fk;**

   m) irtk; [ ]

   M) mirtk; [ ]

5. **gof;ftof;fk;**

   m) Gifg;gpbj;jy; [ ]

   M) kJ mUe;Jjy; [ ]

   ,) ,it ,uz;Lk; [ ]

   <) vJTk; ,y;iy [ ]

6. jpUkzepiy

m) jpUkzkhdtH [ ]

M) jpUkzkhfhjtH [ ]

,) tpthfuj;jhdtH [ ]

<) tpjit [ ]

7. njhopy;

m) Ranjhopy; [ ]

M) muR CopaH [ ]

,) jdpahH epWtdk; [ ]

<) kw;wit [ ]

8. khj tUkhdk;

m) &.5000f;F FiwT [ ]

M) &.5001-10000 tiu [ ]

,) &.10001-15000 tiu [ ]

<) &.15000f;F Nky; [ ]

9. kjk;

m) ,e;J [ ]

M) fpwp];J [ ]

,) K];yPk; [ ]

<) kw;wit [ ]

10. thOkplk;

m) efuk; [ ]

M) fpuhkk; [ ]

,) kiyg;gpuNjrk; [ ]

kd mOj;jk; mwptJ njhlHghd Nfs;tpfs; Ma;T

gFjp - III

fPNo nfhLf;fg;gl;l tpguq;fis $He;J gbj;J rhpahd ,lj;jpy; (√) ,f;Fwpia ,lTk;.

t. vz;.	nghUs;	vg;NghJk; ,y;iy (0)	rpy Neuq;fspy; (1)	gy Neuq;fspy; (2)	mbf;fb (3)
cly; rhHe;j					
31.	vdf;F kaf;fk; tUfpd;w khjphp czUfpNwd;.				
32.	vdf;F iffhy;fs; eLf;fk; ,Ug;gij czUfpNwd;.				
33.	vd; tha; mbf;fb cyHe;J NghfpwJ.				
34.	vdf;F %r;R tpLjy; f\;lkhf cs;sJ.				
35.	vdf;F tpOq;Fjy; kpfTk; fbdkhf cs;sJ				
36.	ehd; ve;j NtiyAk; nra;ahky; ,Uf;Fk; NghJ $l vd; ,jaj;Jbg;G mjpfkhtjhf czUfpNwd.				
37.	ehd; mnrsfhpakhf ,Ug;gjhf czUfpNwd;.				
38.	vdf;F J}f;fk; tUtjpy; rpukkhf cs;sJ.				
39.	vd; fOj;J> KJF kw;Wk; jhilg;gFjpfspy; cs;s rijfs; ,Oj;Jg;gpbg;gjhf czUfpNwd;.				
40.	vdf;F gpj;jj;jiytyp ,Uf;fpwJ.				
kdk; rhHe;j					
41.	ehd; xd;Wkpy;yhj rpWtp\aq;fSf;F $l kd NrhHtilfpNwd;.				
42.	vdf;F vjpHkiw vz;zq;fs; tUfpd;wJ.				
43.	vd; kdk; NrhHtiltjhf czUfpNwd;.				

44.	**vd; euk;Gfs; tpiwj;j epiyapy; cs;sJ.**				
45.	**ehd; ftiyahf ,Ug;gjhf czUfpNwd;.**				
46.	**ehd; Nfhgkhf ,Ug;gij czUfpNwd;.**				
47.	**vd; cly; epiyiag; gw;wpa ftiy vdf;F cs;sJ.**				
48.	**vdf;F mbf;fb Nfhgk; tUfpwJ.**				
49.	**ehd; vJ nra;jhYk; rhpapy;yhjJ Nghy; czUfpNwd;.**				
50.	**vd;dhy; vdJ kdij xU epiyahf itj;jpUf;f Kbatpy;iy.**				
r%fk; rhHe;j					
51.	**ehd; Kd;Ndhf;fp ghHg;gjw;F xd;Wkpy;yhjJ Nghy; czUfpNwd;.**				
52.	**vd; kdk; thba epiyapy; ,Ug;gjhf czUfpNwd;.**				
53.	**ehd; nra;fpd;w ve;j NtiyapYk; re;Njh\k; ,y;iy vd;W czUfpNwd;.**				
54.	**ehd; r%fj;jpy; Kd;dpUe;jJ Nghy; gofKbatpy;iy vd;W czUfpNwd;.**				
55.	**ehd; jdpikapy; ,Ug;gjhf czUfpNwd;.**				
56.	**vdf;F ,e;j r%fj;jpy; kjpg;gpy;yhjJ Nghy; czUfpNwd;.**				
57.	**vd;dhy; xU tp\aj;jpYk; re;Njh\khf ,Uf;f Kbatpy;iy.**				
58.	**vdf;F vd;Nky; ek;gpf;if ,y;iy.**				
59.	**vdf;F gakhf cs;sJ.**				
60.	**vdf;F Vw;gLk; jlq;fy;fis vd;dhy; rfpj;Jf;nfhs;s Kbatpy;iy.**				

ANNEXURE VII

LIST OF EXPERTS

1. **Prof. Mrs. Rukmani,M.Sc., (Nursing),**
   Head, Medical Surgical Department
   Arvinth College of Nursing,
   Namakkal.

2. **Prof. Mrs. Thulasimani, M.Sc., (Nursing)**
   Head, Medical Surgical Department
   Sakthi College of Nursing,
   Dindigul.

3. **Prof. Mrs. Chandramathi, M.Sc., (Nursing)**
   Head, Medical Surgical Department
   Dhanvanthri College of Nursing,
   Komarapalayam.

4. **Dr. V. SUBRAMANIAN, ,M.B.B.S.,D.O.,**
   Senior Civil Surgeon
   B. Komarapalayam

5. **Dr. Selvan, M.S., (General Surgeon),**
   Raghav Hospital,
   Appakudal.